

TO THE
Royal College of Physicians

I N
L O N D O N,

This Treatise is inscribed,

With all due Deference

and Respect,

BY
The AUTHOR.

CONTENTS.

INTRODUCTION,	Page 1
Age proper for inoculation,	7
Constitution for ditto,	9
Season of the year for ditto,	ib.

Preparation.

Regimen necessary,	11
Medicines,	12
Alteration in both for the aged, &c.	ib.
Cautions in particular circumstances and state of health,	13

Infection.

The different methods of communicating it,	14
No danger of additional infection by inoculating in the same room with a patient, from whom the infection is taken, with a caution,	15
No difference whether the infecting matter be taken from a natural or inoculated small-pox,	16
Or before or after the crisis,	ib.
From inoculated persons, the matter to be taken from the place of incision,	ib.
Why no bandage to be used,	17
Infection by matter communicated on the point of a lance,	ib.

Progress

C O N T E N T S.

Progress of the Infection.

When to be particularly observed,	18
Second day's diagnostick and medicine,	ib.
4th and 5th day's diagnostick,	ib.
6th, 7th, 8th, 10th, and 11th day's diagnostick,	19
At this period the feverish symptoms are so mild, as not to require medicines, but if any ne- cessary, give that taken on the 2d night,	ib.
Prognosticks, favourable and unfavourable,	20
Essential difference of the present from the old method or practice,	21
Not to be confined except the weather be ex- tremely severe, and to drink cold water,	ib.
At the time of the eruption no medicine neces- sary, as the cool air is the best cordial,	22
To keep exactly to diet and cooling purges, as directed,	ib.
Advice to those who have it in a light or greater degree,	23
Regimen, when maturation is compleat, with a caution,	ib.
Applications to the part of infection,	24

Anomalous Symptoms and Appearances.

In great sickness and vomiting, what is necessary,	ib.
An erysipelatous efflorescence,	25
A rash, mixed with the variolous eruption,	ib.
The difference of these and their treatment,	26
Symptoms of eruption, appearing earlier or later than the 7th or 8th day,	27
Description of this irregular sort,	28
Observations on a second inoculation,	ib.
Eruptions appearing after returning home, gave rise perhaps of the reports of having the small- pox a second time,	30
Some reasons why it may be so,	ib.

Consequence

C O N T E N T S.

Consequences of this new Method of Inoculation.

Consequences of the cool and repelling method,	31
The old way, attended with bad effects,	32
Advantages of the new way,	ib.
Charges against the new way answered,	33
Inoculation effectually radicates the disorder,	34

The Effects of the Treatment applied to the natural Small-pox.

The natural treated in the same manner as the artificial,	36
Instances recited in which one died out of forty in my practice,	37
Advantages of going into the air,	ib.
The effects of the medicines,	38
The method of proceeding from the eruption to the maturation,	39
The medicine to be used, from the eruption to the accession of the fever of maturation,	ib.
A medicine to be taken in the state of maturation, to abate hate and thirst,	41
A question answered respecting a bad confluent small-pox.	42

The Conclusion.

Great danger of being kept warm and tenderly nursed,	44
Advantage of using fresh matter,	ib.
Exposed to the air in January,	45
The suppression of the fever necessary,	ib.
The medicine used,	ib.
Why bleeding is not used in the new way,	ib.
The effects of non preparation,	46
How near this practice is to Sydenham's cool method, and of the old Greek woman's,	47

C A S E S.

C O N T E N T S.

C A S E S.

1st. Erysipelatous on the inoculated part,	48
2d. Inoculated twice, without maturation,	ib.
3d. The same nearly,	49
4th. The same,	ib.
5th and 6th. Very mild,	51
7th. Very mild, and inoculated again without effect,	ib.
8th. A man had it very mild, but his wife who attended him, took the infection from him, and had it very favourable,	52
9th. A young man who had taken cold after inoculation,	53
10th. Very mild,	54
11th. Without any eruption, but an inflammation on the inoculated part,	55
12th. Another the same way,	56

Cases attended with an erysipelatous Rash.

13th. Attended with an erysipelatous and petechial spots,	57
14th. Attended with an erysipelatous rash,	58
15th. Eruptions on the 9th day, and more on the 14th,	59
16th. Another with a first and second eruption,	60
17th. Attended with the peripneumonic disorder, a very particular case,	62
18th. After becoming well on the 9th day, had a fresh eruption on the 12th day,	65
19th. Attended with worms,	66
20th. Attended with numbness and coldness in the legs and thighs,	68
21st. Attended with a remarkable sore throat and difficulty of swallowing,	71
22d. Attended with a cold, a fit, and a cough,	73

Some

C O N T E N T S.

Some Cases which if not truly and fully stated might be disadvantageous to Inoculation, and which happened at a time, when an epidemical Chin Cough had been at Hertford, when every Child who had the Chin Cough, and was seized with the natural Small-pox, died of the confluent kind, 76

A mother and her three children, 77

A weakly child, ib.

A child at the breast, 78

Another case, where the patient after being well of the small-pox, died of an apoplectic fit, ib.

Cases of the natural Small-pox, whose Subjects were treated in the Manner of the inoculated Patients.

23d. A man, 79

24th. A woman, 83

25th. A man inoculated, and the natural small-pox appeared on him the second day, without any infection on the inoculated part, 84

26th. A woman and very remarkable, 86

27th. Another ditto, 88

28th. A man, 90

29th. A man, ib.

A Treatise on the natural Small-pox, as also on the artificial by Inoculation, with that on the Measles. By William Buchan, M. D.

On the Natural Small-pox.

The state of the body which principally occasions it, 95

Symptoms of its approach, 96

Regimen to be pursued, 97

Medicine necessary, 101

b

On

C O N T E N T S.

On Inoculation.

The nostrums of some modern inoculators, only calculated for mercenary purposes,	107
Inoculation, how practised in Turkey,	108
Dr. M'Kenzie's opinion of inoculation,	110
Means for rendering this valuable acquisition universal,	112
What principally operate to prevent the pro- gress of inoculation,	113
Communicated without raising any part of the skin,	115
The most proper age for communicating the disorder,	ib.
The preparations necessary with the regimen,	116
Circumstances that occasioned an opinion that the disorder might be taken a second time,	ib.

On the Measles.

State of the Body favourable to it,	119
Symptoms of its approach,	ib.
Regimen necessary to be followed,	120
Medicine to be taken,	121

An Account of some Experiments in Inoculation made at Vienna, under the Inspection of Dr. Baron Van Sweiten, and other Physicians.

His opinion of the nostrum given by some as a preparative course,	127
His opinion of a preparative course,	ib.
Experiment on infants,	128
Process pursued,	ib.
Observations on the regimen,	ib.
On the use of medicine,	ib.
The natural small-pox treated as that by inocu- lation,	129
Success of the practice,	ib.

INTRODUCTION.

FROM the time that I entered into the practice of medicine, and saw the danger to which the generality of those who had the small-pox in the natural way were exposed, I could not but sincerely wish, with every sensible person of the faculty, that Inoculation might become general.

A considerable share of employment in this branch of my profession has for upwards of twenty years occurred to me; and altho' I have been so fortunate as not to lose a patient under inoculation, except one child, about fourteen years ago, who after the eruption of a few distinct pustules died of a fever, which I esteemed wholly independent of the small-pox, yet I must acknowledge, that, in some cases, the symptoms have cost me not a little anxiety for the event.

Nor have the subsequent effects of this practice always been so favourable

B

vourable as one could wish ; and tho' far from equalling those which too often follow the natural small-pox, either in respect to difficulty or number, yet they sometimes gave no small uneasiness to the operator.

It cannot likewise, it ought not to be concealed, that some of the inoculated have died under this process, even under the care of very able and experienced practitioners. But this number is so small, that, when compared with the mortality attending the natural small-pox, it is reduced almost to a cypher.

These circumstances, however, tended to discourage the operation in some degree. Practitioners were cautious of urging a process, of whose events they could not be certain: and parents, who were sensible enough to observe, that, though the chance was greatly in their favour, yet a blank might cast up against them, engaged in it with hesitation.

Humanity, as well as a wish to promote the honour and advantage of the art

art I profess, made me ever attentive to the improvement of this part of my employment. Dissatisfied with the common methods, I had carefully attended to the circumstances that seemed to contribute to the good or ill success of this practice in the course of my own business, as well as to the best information I could get of the success of others.

Many facts had induced me to think that regimen, preparation, and management would do much: that as the disease was of an inflammatory kind, a cooling regimen must certainly, for the most part, be reasonable. Some faint essays were made to try how far this sentiment might be just. But those who are the best acquainted with the first aphorism of Hippocrates will be the first in justifying a cautious procedure, where the object is no less than the life of an individual.

In this situation I first heard, and with the utmost satisfaction, that in some parts of the nation, a new and

more successful method of inoculating was discovered, than had hitherto been practised. The relators gave incredible accounts of the success; which was the more marvellous, as the operators were chiefly such, as by report could lay but little claim to medical erudition.

Knowing that improvements which would do honour to the most elevated human understandings, are sometimes stumbled upon by men of more confined abilities; and that in medicine, as well as in every other circumstance in life, it is our duty to avail ourselves as much as possible of all discoveries tending to the common benefit, I embraced every *just opportunity* of informing myself of facts, circumstances, and events, that either public fame, or more precise relations brought to me. I use the term *just opportunity*, because, if I am not misinformed, endeavours have been used, inconsistent with equity and candour, to rob those who are intitled to our gratitude for assisting us in this important process, of
that

that share of private emolument which is their due, let their title to the discovery be ever so paradoxical.

To expose patients, even in the inoculated small-pox, to all weathers, was a thing unheard of. To permit them through the whole progress of the disease to go abroad, and follow their usual vocations, and that they should neither suffer any present evil, nor experience any disagreeable consequences, was still more surprizing; yet an infinite number of instances have confirmed all this, and some of these instances will appear in the sequel of this performance.

The design of this treatise is to bring the practice still one step nearer to perfection, and lessen the ravages of a distemper, which is not a native of Britain, but, like the plague, has been imported from a foreign country, and demands the exertion of all the powers we are possessed of, either to exterminate it from amongst us, which perhaps is not practicable, or
to

to render it less unsafe, if not wholly without difficulty or danger.

The following directions for this purpose, are the result of an extensive practice: and if a strong persuasion of the truth of what he writes, founded on repeated trials and impartial observations, should have led the author to express himself in a very sanguine manner, the future experience of others, he trusts, will be his justification.

Hertford, Nov. 1.

1766.

Of

Of the AGE, CONSTITUTION, and SEASON
of the Year proper for INOCULATION.

BEFORE I proceed to describe the regimen and preparatives, it may not be improper to mention what has occurred to me in respect to the most suitable age and constitution for inoculation; and likewise what seasons seem to be more or less favourable for the practice.

In regard to age; where it is left to my choice, I decline inoculating children under two years old. I know the common practice is against me in this particular; but my reasons for rejecting such are founded on observation and experience. I have, indeed, lately inoculated many under this age, at the pressing entreaties of their parents, and they have all done well. But it must be considered, that young children are exposed to all the hazards of dentition, fevers, fluxes, convulsions, and other accidents, sufficiently difficult in themselves to manage in such tender subjects; infomuch that scarce two in three of all that are born, live to be two years old; as is demonstrable from the Bills of Mortality.

Besides, convulsive paroxysms often accompany the variolous eruptive fever in children; and though generally looked upon in no unfavourable light, as often preceding a distinct kind of small-pox, yet they are at all times attended with some degree of danger; nay, many, it is well known, have expired under them; while others, who have struggled

gled through with great difficulty, have been so debilitated, and their faculties so impaired, that the effects have been perceptible during the remaining part of their lives.

And even admitting the eruption to be favourable, and not attended with any such alarm, yet should a larger number of pustules than usual appear, or any untoward symptom happen, and require medical help, the unhappy sufferer is much too young to be prevailed on to take unpalatable medicines, or submit to other necessary measures, by persuasions, menaces, or bribes. I have often been present at afflicting scenes of this nature; and have reason to think that many children have died of the small-pox in the natural way, merely from the impossibility of prevailing upon them to comply with what was proper, in cases where little or no danger was discoverable, either from the number or species of the pustules, the degree of fever, or any other apparent cause.

It must likewise be taken into consideration, that young children have usually a larger share of pustules from inoculation, than those who are advanced a little farther in life; and that under this circumstance it is well known many have died; and the proportion of these, so far as I can learn, is too great to encourage a continuance in the inoculation of young children; so that it seems most prudent to wait till this dangerous period be over, especially as its duration is so short, that the danger of their receiving the small-pox therein in the natural way is very little; and it is at this time much more easy to preserve them from it, than when they are left more to themselves, and may be more in the way of infection. But children above this period may be inoculated more freely; nor does there appear any reason to exclude healthy adults of any age, persons of seventy having passed through

through this process with the utmost ease, and without occasioning the least painful apprehension for the event.

In respect to constitution, greater liberties may be taken than have heretofore been judged admissible: persons afflicted with various chronic complaints, of scrophulous, scorbutic, and arthritic habits; persons of unwieldy corpulency, and of intemperate and irregular lives, have all passed through this disease, with as much ease and safety as the most temperate, healthy, and regular. But those who labour under any acute or critical diseases, or their effects, are obviously unfit and improper subjects. So likewise are those where there are evident marks of corrosive acrimonious humours, or where there is a manifest debility of the whole frame from inanition, or any other cause; all these should be treated in a proper manner previous to the introduction of this disease. Constitutions disposed to frequent returns of intermittents, seem likewise justly exceptionable; especially as the preparatory regimen may in some habits increase this tendency. I have known, however, instances of severe ague fits attacking persons between the insertion of the matter and the eruption of the pock, and even during maturation; when the Peruvian bark has been given liberally and with success; the principal business, in the mean time, suffering no injury or interruption.

Among the circumstances generally considered as more or less propitious to inoculation, the season of the year has hitherto been deemed a matter of some importance. Spring and autumn, for the most part, have been recommended, as being the most temperate seasons; the cold of winter, and the summer heats, having been judged unfavourable for this process. But experience does not justify these opinions; for according to the best obser-

C

vation

vation I have been able to make, inoculated persons have generally had more pustules in spring than at any other time of the year; and epidemic diseases being commonly most frequent in autumn, especially fluxes, intermittents, and ulcerated sore throats (all which are liable to mix more or less with the small-pox) the autumn, upon this account, does not seem to be the most favourable season in general.

My opinion is, that, considering the surprizing and indisputable benefits arising at all times to patients in the small-pox, from the free admission of fresh cool air and evacuations (which will appear from some cases hereafter subjoined) we may safely inoculate in all seasons, provided care be taken to screen the patients as much as possible from heat in summer, and to prevent them from keeping themselves too warm, and too much shut up, as they are naturally disposed to do, from the weather in winter. And it is well known, that many have been inoculated in the depth of winter, and some during the greatest heat in summer, without suffering any injury or inconvenience from either.

When seasons, however, are marked with any peculiar epidemics, of such a kind especially as may render a mild disease more untractable, it may perhaps be most prudent not to inoculate while such diseases are prevalent.

An eminent physician of my acquaintance in London, at that time in considerable business, informed me, that in the year 1756 the small-pox was very rife, in the summer of that year especially. That in most of them the throat was so much affected, that about the seventh day from the eruption, when they ought to have taken liquors in abundance, they could not swallow a drop. The ptyalism was in the mean time copious; and the kind being for the most part confluent, they died on the tenth or eleventh day; and those who sunk
under

under this distemper (who were by much the majority) all suffered from this cause. This instance is only given to shew the necessity of regarding the general state of epidemics when we go into this operation; and to excite those who are friends to this most beneficial discovery, to use every means in their power to provide against a single instance of ill success.

Of the PREPARATION.

IN directing the preparatory regimen, I principally aim at these points: to reduce the patient, if in high health, to a low and more secure state; to strengthen the constitution, if too low; to correct what appears vitiated, and to clear the stomach and bowels, as much as may be, from all crudities and their effects. With this view, I order such of my patients as constitute the first class, and who are by much the majority, to live in the following manner: to abstain from all animal food, including broths, also butter and cheese, and from all fermented liquors, excepting small beer, which is allowed sparingly, and from all spices, and whatever possesses a manifest heating quality. The diet is to consist of pudding, gruel, sago, milk, rice-milk, fruit, pyes, greens, roots, and vegetables of all the kinds in season, prepared or raw. Eggs, though not to be eat alone, are allowed in puddings, and butter in pye-crust; the patients are to be careful that they do not eat such a quantity as to overload their stomachs, even of this kind of food. Tea, coffee, or chocolate are permitted for breakfast, to those who choose or are accustomed to them.

case of sucking children's being inoculated, which cannot always be avoided let the nurse abstain from spirituous or malitious liquors & take a couple of doses of salt & give the child 3 papers of [12] powder made up of

Calomel 6 gr.
magnati 1 Dram
fish sugar 1/2 Dram
mixed & rubbed fine
a well together
Divide this compound
ment into 12 papers
& give one to a child
of 6 months at
every dose

reduce the quantity
if younger

The
Calomel pills
children of

1 } years 2 gr.
2 }
3 }

4 } years 3 gr.
5 }
6 }

7 }
8 } years 4 gr.
9 }
10 }

Six grains in
general make a
sufficient dose
for a full grown
person but if
in full health

In this manner they are to proceed about nine or ten days before the operation; during which period, at nearly equal distances, they are directed to take three doses of the following powder, either made into pills, or mixed with a little syrup or jelly, at bed-time, and a dose of Glauber's salt, dissolved in thin water-gruel, each succeeding morning.

The powder is composed of eight grains of calomel, the same quantity of the compound powder of crab claws, and one eighth part of a grain of emetic tartar. Instead of emetic tartar, I have sometimes substituted two grains of precipitated sulphur of antimony. In order to facilitate the division of the doses, a large quantity is prepared at once, and great care taken that the mixture is well performed.

This quantity is usually sufficient for a healthy strong man; and the dose must be lessened for women or children, according to their age and strength, as well as for persons advanced in years.

The first dose is commonly ordered at the commencement of the course; the second, three or four days after; and the third, about the eighth or ninth day; and I choose to inoculate the day after the last dose has been taken. On the days of purging, broths are allowed, and the patients are desired to abstain from unprepared vegetables.

What has hitherto been said concerning the preparation, must be considered as proper only for the young or middle-aged, in a good state of health; but among those who are desirous of inoculation are often found tender, delicate, and weakly women, men of bad stamina, valetudinarians by constitution, by illness or intemperance; also aged persons and children; and for these a very different treatment is directed; a milder course of medicine, rather of the alterative than purgative kind, is here preferable; and in many instances, an indulgence

in a vigorous you may give 8 grains

*Confluent kind - in children
or bark 10 grains in one spoonful of wine
two of water 2 or 3 times to be repeated 2 or 3
times allowing an interval of 2 hours*

in some light animal food, with a glass or two of wine in case of lowness, is not only allowable, but necessary to support a proper degree of strength, especially in advanced age.

Children whose bowels are often tender, and ought not to be ruffled by strong purges, yet require a mild mercurial, and bear it well: besides emptying the bowels of crudities, it is a good security against worms and their effects, which are sometimes of themselves perplexing enough, and produce very alarming and even fatal disorders.

Indeed the particular state of health of every person entering upon the preparatory course, should be inquired into and considered. Inattention to this, has, I am satisfied, done great mischief, and particularly the indiscreet use of mercurials, whereby a salivation has often been raised, to the risque of impairing good constitutions, and the ruin of such as were previously weak and infirm. The distinctions and treatment necessary, will be obvious to those who are acquainted with the animal œconomy and medical practice.

The time of menstruation has generally been the guide in respect to the inoculation of women; that the whole of the disease might be over within the menstrual period. This I commonly observe, when I can choose my time without any inconvenience, and inoculate soon after the evacuation ceases; though I have no reason to decline performing the operation at any time; as I can produce many examples in which no inconvenience has arisen, nor any difference been observable, when this circumstance has been disregarded.

Women with child have likewise been inoculated and done well; yet some particular emergency should be pleaded in excuse for it in their situation, as it may be attended with some hazard. I have not inoculated any woman whom I knew to be pregnant;

pregnant; but some, who concealed their pregnancy, have been inoculated by me, who, I fancy, hoped for an event that did not happen, I mean miscarriages; one of these had a child born nine weeks after inoculation, at the full time, with distinct marks of the disease, though the mother had very few eruptions.

Of INFECTION.

THE manner of communicating this distemper by inoculation in this country, has of late been the following: A thread is drawn through a ripe pustule, and well moistened with the matter: a piece of this thread is insinuated into a superficial incision made in one or both arms, near the part where issues are usually fixed; this thread is covered with a plaister, and there left for a day or two. This is the most usual way, though others have been practised by several in the profession.

At present, very different methods are pursued; two of which, that vary in some respects, I have frequently practised, and shall describe; but the following has been so invariably successful, as to induce me to give it the preference.

The patient to be infected being in the same house, and, if no objection is made to it, in the same room, with one who has the disease, a little of the variolous matter is taken from the place of infection, if the subject is under inoculation; or a pustule, if in the natural way, on the point of a lancet, so that both sides of the point are moistened.

With this lancet an incision is made in that part of the arm where issues are usually placed, deep enough to pass through the scarf skin, and just to

touch

touch the skin itself, and in length as short as possible, not more than one eighth of an inch.

The little wound being then stretched open between the finger and thumb of the operator, the incision is moistened with the matter, by gently touching it with the flat side of the infected lancet. This operation is generally performed in both arms, and sometimes in two places in one arm, a little distant from each other. For as I have not observed any inconvenience from two or three incisions, I seldom trust to one; that neither I nor my patient may be under any doubt about the success of the operation from its being performed in one place only.

I have also tried the following method, with the same success as that above described, but do not so well approve of it, because I have been credibly informed that it has sometimes failed in the practice of others. A lancet being moistened with the variolous fluid in the same manner as in the other, is gently introduced, in an oblique manner, between the scarf and true skin, and the finger of the operator is applied on the point, in order to wipe off the infection from the lancet, when it is withdrawn. In this method, as well as in the former, a little blood will sometimes appear; but I neither draw blood with design, nor do I think it necessary to wipe it off before the matter is introduced.

In both these ways of inoculating, neither plaster, bandage, or covering is applied, or in any respect necessary.

These methods of producing the disease never once have failed me; and experience has sufficiently proved, that there is no danger from additional infection, by the natural disease at the same time. I therefore make no scruple of having the person to be inoculated, and the patient from whom the infection is to be taken, in the same room; nor have ever perceived any ill consequences attending it.

it. But I advise the inoculated patients (though perhaps there is no necessity for that precaution) to be afterwards separated from places of infection till certain signs of success appear, when all restraint is removed, there being no danger from accumulation.

It seems to be of no consequence whether the infecting matter be taken from the natural or inoculated small-pox: I have used both, and never have been able to discover the least difference, either in point of certainty of infection, the progress, or the event; and therefore I take the infection from either, as opportunity offers, or at the option of my patients or their friends.

Nor is it of consequence whether the matter be taken before, or at the crisis of, the distemper. It is, I believe, generally supposed, that the small-pox is not infectious till after the matter has acquired a certain degree of maturity; and in the common method of inoculation, this is much attended to; and when the operation has failed, it has commonly been ascribed to the unripeness of the matter.

But it appears very clearly from the present practice of inoculation, that so soon as any moisture can be taken from the infected part of an inoculated patient, previous to the appearance of any pustules, and even previous to the eruptive fever, this moisture is capable of communicating the small-pox with the utmost certainty. I have taken a little clear fluid from the elevated pellicle on the incised part, even so early as the fourth day after the operation; and have at other times used matter fully digested at the crisis, with equal success. I choose, however, in general, to take matter for infection during the fever of eruption, as I suppose it at that time to have its utmost activity.

In all cases, when I take matter from an inoculated person, it is from the place where it was inserted;

ferted; as I am always sure to find infection there if the disease succeeds, and always of sufficient energy.

It may appear strange that no bandage, dressing, or application whatsoever, is made use of to the part infected; but that the most simple incision being made, and moistened with the smallest particle of the recent fluid matter, the whole is committed to nature. This method is however perfectly right, because the application of either plaister or unguent, as is the usual practice, will occasion an inflammation on some skins, and in all tend to disguise the natural appearance of the incision, and prevent our forming a proper judgment of the progress of the infection; which will afterwards appear to be a matter of much importance.

If neither an inoculated patient is at hand, nor any one in the neighbourhood has a distinct kind of the natural disease, a thread may be used as in the common manner, provided the thread be very recently infected; but I think it ought to be used as soon as possible after being charged with infecting matter.

The following method of introducing the disease has likewise been found effectual; but I have never practised it myself. Dip the point of a lancet in variolous matter; let it be held in the air till it is dry; after which it may be closed and kept in the common case without any further care; and with this prepared lancet raise the scarf skin obliquely, and keep the lancet a little time in motion between the two skins, that part of the matter may be mixed with the animal juices; then withdraw the lancet, and leave the incision uncovered as before.

Of the PROGRESS of INFECTION.

HITHERTO very little regard seems to have been paid to the progress of infection discoverable by the part where the operation was performed. But it will appear in the sequel, that an attention to this circumstance is very necessary, because a just prognostic may thence be sometimes formed of the future state of the distemper, and indications may be taken from the different appearances on the arm, that will enable us to prevent inconveniencies.

The former method of covering the place of incision with a plaister, and continuing upon it dressings of one sort or another, prevented much useful information of this kind. They prevented any judgment by the touch, and sometimes rendered that by the eye equivocal.

The day after the operation is performed, though it takes effect, little alteration is discoverable. On the second day, if the part is viewed with a lens, there generally appears a kind of orange-coloured stain about the incision, and the surrounding skin seems to contract. At this time I usually give the following medicine at going to bed, either mixed with a little of any kind of jelly, or more frequently made into a pill.

Calomel and compound powder of crabs claws, of each 3 grains, emetic tartar $\frac{1}{10}$ of a grain.

A quantity of this medicine should be carefully prepared at once, in order to make the division more exact.

On the fourth or fifth day, upon applying the finger, a hardness is to be felt by the touch. The patient perceives an itching on the part, which appears slightly inflamed, and under a kind of vesication is seen a little clear fluid; the part resembling

bling a superficial burn. About the sixth, most commonly some pain and stiffness is felt in the axilla; and this is a very pleasing symptom, as it not only foretells the near approach of the eruptive symptoms, but is a sign of a favourable progress of the disease. Sometimes on the seventh, oftener on the eighth day, symptoms of the eruptive fever appear; such as slight remitting pains in the head and back, succeeded by transient shiverings and alternate heats, which in a greater or less degree continue till the eruption is perfected. At this time also it is usual for the patient to complain of a very disagreeable taste in his mouth, the breath is always fetid, and the smell different from what I have ever observed in any case, except in the variolous eruptive fever.

The inflammation in the arms at this time spreads fast; and upon viewing it with a good glass, the incision, for the most part, appears surrounded with an infinite number of small confluent pustules, which increase in size and extent as the disease advances. On the tenth or eleventh day, a circular or oval efflorescence is usually discovered, surrounding the incision, and extending sometimes near half round the arm, but more frequently to about the size of a shilling; and being under the cuticle, is smooth to the touch, and not painful. This appearance is also a very pleasing one; it accompanies eruption; every disagreeable symptom ceases; and, at the same time, it certainly indicates the whole affair to be over; the pain and stiffness in the axilla also going off.

The feverish symptoms are for the most part so mild, as seldom to require any medicinal assistance, except a repetition of the same medicine that was directed on the second night after the operation; and on the following morning this laxative draught, to procure three or four stools;

Infusion of fena two ounces, manna half an ounce, tincture of jalap two drachms.

These are given as soon as the eruptive symptoms are perceivable, if they seem to indicate any uncommon degree of vehemence.

It has been observed, that by attending to the progress of infection, we may be able to prognosticate, with some degree of certainty, the event of the distemper in general. Particular incidents will ever happen, but not sufficient to destroy the propriety of general rules.

If the appearances already described are observed early, a very favourable event is implied: but it happens in some cases, although it may be perceived that the inoculation has succeeded, yet it is barely perceptible; the colour about the wound remaining pale, instead of changing to red or inflamed; the edges of the incision spread but little, they remain flat, scarcely rising at all, and are attended neither with itching or uneasiness of any kind. Nay, sometimes on the fifth, and even the sixth day, the alteration is so little, as to make it doubtful whether the infection has taken place.

When matters are in this state, the appearance is unfavourable, and implies a late and more untoward disease: to prevent which, I direct the powder or pill to be taken each night; and in case it fails to operate by stool, or there is the least disposition to costiveness, an ounce of Glauber's salts, or more commonly the laxative draught already mentioned, is given in the morning, once or twice, as the case may require. This course forwards the inflammation, which I always wish to see; as I have constantly observed, that an early progress on the the arm, and an early commencement of the eruptive complaints, portend that the distemper will be mild and favourable; and on the contrary, where both

both are late, the symptoms are usually more irregular and untoward.

Being now arrived at the most interesting period of this distemper, the eruption, a period in which the present practice I am about to recommend, differs essentially from the method heretofore in use, and on the right management of which much depends, it will be requisite to give clear and explicit directions on this head, and to advise their being pursued with firmness and moderation.

Instead of confining the patient to his bed, or his room, when the symptoms of the eruptive fever come on, he is directed, as soon as the purging medicine has operated, to keep abroad in the open air, be it ever so cold, as much as he can bear, and to drink cold water, if thirsty; always taking care not to stand still, but to walk about moderately while abroad.

This treatment indeed seems as hard at first to the patients, as it must appear singular to the reader; but the effects are so salutary, and so constantly confirmed by experience, and an easy progress through every stage of the disease depends so much upon it, that I admit of no exception, unless the weather be extremely severe, and the constitution very delicate. And it is indisputably true, that in the few instances where the symptoms of eruption have run very high, the patients dreading any motion, and fearing the cold as the greatest evil, yet, when under these circumstances, I have persuaded them to rise out of bed, and go out doors, though led sometimes by two assistants, and have allowed them to drink as much cold water as they chose, they have not suffered the least sinister accident. On the contrary, after they have been prevailed on, altho' reluctantly, to comply with these directions, they find their spirits revived; an inclination for nourishment returns; they
rest

rest well; a gentle sweat succeeds, accompanied with a favourable eruption; and the fever seems wholly to be extinguished.

In general, the complaints in this state are very moderate, and attended with so little illness, that the patient eats and sleeps well the whole time: a few pustules appear, sometimes equally dispersed; sometimes the inflammations on the arms spread, and are surrounded with a few pustules, which gradually advance to maturity; during which time, for the most part, the eruption proceeds kindly, and there is much more difficulty to restrain the patients within due bounds, and prevent their mixing with the public, and spreading the infection, (which I always endeavour to prevent) than there was at first to prevail upon them to go abroad. During this time medicine is seldom wanted; the cool air seems the best cordial; and if any uncommon languor happens, a basin of small broth, or a glass of wine, is allowed in the day, or some white-wine whey at bed time; which are indeed at any time allowed to tender, aged, or weakly persons.

With these exceptions, they have hitherto been kept very scrupulously to the diet at first directed. But after the eruption is completed, if occasion requires, they are indulged in a little well-boiled meat of the lightest kind, as chicken, veal, or mutton.

The regimen above-mentioned, the cooling alterative purges, and the free use of cool air at the season of eruption, almost universally prevent either alarming symptoms, or a large crop of pustules. A few I have seen with such a quantity of pustules, tho' distinct, that I have neither advised nor allowed them to go out of the house. But the generality of my patients, when the eruptions are few, amuse themselves abroad within proper limits, with the pustules out upon them.

I neither

I neither enjoin this, nor maintain that it is necessary; but have not been able to observe that any inconvenience has arisen from it. And how strange soever it may appear, it is true, that those who are most adventurous, seem to be in better spirits, and more free from complaints, than others who are inclined to keep within doors. And indeed, such of my patients as have received the benefit of this treatment themselves, seldom permit those who are in the hardest part of the distemper, the eruptive, to keep much in the house; but encourage them to bear a little hardship, by recounting to them the benefit they have reaped from the method they are recommending.

Those who have the disease in the slightest manner first described, viz. without any appearance of eruption but on the inoculated part, are soon allowed to go about their usual affairs; and many instances have happened of very industrious poor men, who have instantly returned to their daily labour, with a caution not to intermix with those who have not had the distemper, for fear of spreading it, and with directions to take two or three times of the purge already directed, or as many doses of Glauber's salts. Those who have it in a greater degree, are confined somewhat longer; and a very mild laxative is now-and-then exhibited, if there is the least disposition to costiveness; as the progress to maturation appears rather to be advanced than retarded by the operation.

When the maturation is completed, and it is evident we have nothing further to fear from the distemper, I allow my patients gradually to change their course of diet, from the perfectly cooling kind, to one a little more generous; recommending strictly to all a return to their ordinary animal diet with much caution and restraint upon their appetites, both in respect to food and fermented liquors.

It

It is not often that we are under a necessity of making any application to the part where the operation was performed: it most commonly heals up, and is covered with a scab, about the time when, in a natural way, all the pocks would have been dried up: but there are some cases wherein the incisions continue to discharge a purulent matter longer; in these instances it is sufficient to cover the place with the white cerate, or any other mild emplastick substance, which may at once prevent the linen from adhering to the sore, and defend it from the air. And as in these cases the part remains unhealed from some peculiar cause in the habit, it will be necessary to give gentle purgatives, and proper alteratives, as particular exigencies may require.

O F

ANOMALOUS SYMPTOMS

A N D

A P P E A R A N C E S.

IN the preceding pages I have described the usual progress of the small-pox from the inoculation. There are, however, deviations from this course, and indeed not a few; some of the most material of which, as they may embarrass the inexperienced, and create a real difficulty, as well as apprehensions of danger, it seems necessary to describe, and the means that experience has suggested to remove these symptoms, or the doubts respecting the event.

The first I shall take notice of, and which, though it very rarely happens, sometimes gives much trouble, is great sickness, accompanied with vomiting,

vomiting, coming on during the eruptive state of the distemper. For this complaint it is always necessary in the first place to clear the stomach, which may be effected, either by ordering the patient to drink plentifully of warm liquids to promote vomiting; or perhaps more properly, by giving one grain of emetic tartar to an adult, mixed with ten grains of compound powder of crabs claws, taking care to lessen the dose for very young and weak subjects.

This usually throws off some bilious matter by vomit, sometimes procures stools, or occasions a moderate sweat, and generally administers relief. If, however, no stools should follow from this medicine, and the sickness should remain, a gentle laxative almost certainly procures a respite, and the appearance of the eruption removes the complaint entirely.

Another deviation, of still more consequence, which sometimes happens towards the time of the eruption, and is often, though not always, accompanied with great sickness, is an erysipelatous efflorescence. This, if it shews itself on the skin partially, and here and there in patches, is not very alarming, and soon wears off

But sometimes the whole surface of the skin is covered with a rash intimately mixed with the variolous eruption, and so much resembling the most malignant kind of confluent small-pox, as scarcely to be distinguished from it: and indeed some cases of this sort have happened, where, being accompanied with petechiæ and livid spots, I have been much alarmed: not being able, by inspection only, though assisted by glasses, to determine whether what I saw was an inoffensive rash, or tokens of the greatest malignity. Very strict attention, however, has enabled me to distinguish the difference clearly; and the following observations will, I hope,

E

tend

tend to relieve others from the anxiety they would feel upon such an appearance.

The real and essential difference then is to be gathered from the concomitant symptoms. In the erysipelatous or variolous rash, there is not so much fever, nor is the restlessness, or pain of the head or loins, so considerable; neither is there that general prostration of strength, which are almost never-failing attendants on a confluent small-pox, especially when accompanied with such putrid appearances. Besides, upon a careful examination, there may sometimes be discerned a few distinct pustules, larger than the rest, mixed with the rash, which are indeed the real small-pox. In these cases the patients are ordered to refrain from cold water, or any thing cold, and to keep within doors, but not to go to bed. If any sickness yet remains, a little white-wine whey, or other moderate cordial, is advised: and this method has hitherto been so successful, as to prevent any alarming complaint. After two or three days, the skin from a florid changes to a dusky colour, a few distinct pustules remain, and advance properly to maturation, without any further trouble ensuing from this formidable appearance*.

This rash has been often mistaken for the confluence it so nearly resembles, and has afforded occasion for some practitioners, either ignorantly or disingenuously, to pretend, that, after a very copious eruption of the confluent pox, they can, by a specific medicine, discharge the major part of the pustules, leaving only as many distinct ones as may satisfy the patient that he has the disease. Such pretensions have certainly been made; and the patient, who has been deceived in this manner, has contributed to spread reports untrue as to the fact, and

* See Cases XIII, XIV.

probably

probably prejudicial to the health of others, who in like circumstances have been sent abroad, and other cool means pursued, by which the rash has been repelled, and the bad effects experienced afterwards.

I must also observe here, that rashes of the kind I have described frequently happen during the preparation (whether owing to the regimen, or medicine, or both, I cannot say) and cause the operation to be postponed: but I have observed, that in such cases they are apt to return at the time of the eruption of the small-pox.

In general, as has been already said, the symptoms which precede eruption commence at the end of the seventh, or in the eighth day inclusive from the operation; but it often happens that they appear much sooner, and sometimes much later, than the time above-mentioned. For instance, I have seen some cases wherein the disease has happened so suddenly after infection, and with so little complaint or uneasiness, that the whole affair has been terminated, purges taken, and the patient returned home perfectly well in a week's time; before others, inoculated at the same time, from the same patient, and under the same circumstances, have begun to complain.

In this case the inoculated part shews early certain marks of infection, sometimes on the very next day, or the day after, when the incision will often appear considerably inflamed and elevated. The patient about this time frequently makes some of the following complaints, viz. chillness, itchings, and small pricking pains in the part, and sometimes on the shoulder, giddiness, drowsiness, and a slight head-ach, sometimes attended with a feverish heat, but often without any: the account they themselves give of their feelings, is, in some, as if they had drank too much, and in others, as if they had

caught a cold. These complaints seldom last twenty-four hours, often not so long, and with frequent remissions, and never, that I remember, rise to a degree that requires confinement. The inflammation on the arm at the time of the complaints advances apace, and feels hard to the touch; but upon their wearing off, the inflamed appearances gradually lessen, and the part dries to a common small scab; the skin that was before red, turns livid, and the party is quite well, and nothing more heard of the distemper*. In some instances these symptoms attack much later; even on the seventh or eighth day, when an eruption might be expected in consequence of them, yet none appears; but the arm gets well very soon, and the disease is at an end.

In this irregular sort of the disorder there have, however, been some examples where a few eruptions have appeared, and probably in consequence of the inoculation; yet the pustules have not looked like the true pocks, nor matured like them, nor lasted longer than three days; about which time they, for the most part, have dried away.

As I find it difficult to describe the variety and irregularity of symptoms that occur in this short way of having the distemper, I will give some cases, by way of illustrating the matter more to the reader's satisfaction.

When subjects of this sort first occurred in my practice, I was in doubt whether they were quite secure from any future attacks of the distemper; and in order to try whether they were so or not, I inoculated them a second time, and caused them to associate with persons in every stage of the disease, and to try all other means of catching the infection; and this method has been practised with the generality of such patients ever since, yet without a

* See Case I.—XII.

single instance of its producing any disorder; so that I now make no scruple of pronouncing them perfectly safe: and experience has enabled me, for the most part, to foretell, in two or three days after the operation, when the disease will pass in this slight manner.

Upon the second inoculation, however, the incised parts are commonly inflamed for a day or two, just in the same manner as I have, in numerous instances, found them to be as well in those who, though certain of having had the small-pox in the natural way, have submitted to be inoculated merely for the experiment sake, that the result might be observed, as in others, who, being doubtful whether they have had it or not, have been inoculated, in order to be satisfied. But in all such cases the parts soon became well; nor did any of those appearances which have been described as the constant attendants on inoculation, as pain in the head, giddiness, marks of infection in the arm, &c. ensue; nor can they ever be produced upon a person who has had the small-pox before, either in the natural way or by inoculation; and therefore it cannot with reason be suggested, that the patients, whom I suppose to get through the disease in the very slight manner above described, may possibly have had the small-pox unobserved in some former part of their lives.

Another irregularity deserving notice here is, that sometimes, upon the abatement of the fever and other symptoms, after the appearance of several pustules, and when the eruptive stage of the disease seems completed, it nevertheless happens that fresh eruptions come out, and continue doing so daily, for four, five, or even six days successively; preceded sometimes by a slight pain in the head, though more frequently they appear without any new disturbance. These are generally few in number,
short-

short-lived, and seldom come to maturity. But I have seen four cases, in each of which, after a cessation of complaints, and an appearance of few pustules, the eruptive stage of the disease was thought to be over, yet in two or three days a fresh fit of fever has attacked the patients, and after a short illness a quantity of new pustules has broke out, far exceeding the first number, and these remained, and matured completely. Instances of this kind may be found among the cases annexed*.

Some of my own patients, and, as I am credibly informed, of other inoculators in this way, have had considerable eruptions of this kind after they returned home; which have, probably, given occasion for the reports of several having had the disease again in the natural way after inoculation. But that these reports are ill-grounded, will appear from this observation, to wit, that in all the cases of this sort which have occurred in my own practice, or, as far as I can learn, in that of others, the second or latter crop of pustules has always happened within the time usually allowed for the progress of the small-pox from inoculation, and before the inflammation on the arm has ceased, and sooner than they could be supposed to be produced by infection taken in the natural way; and whenever it has happened, it has been to persons in whom, after a slight eruption, and abatement of symptoms, the disease has prematurely been judged to be quite over, and they have therefore been permitted to return to their families.

It will doubtless be asked, how cases of this kind should ever happen among those who return home as cured? To which I answer, That it is no unusual thing for industrious men, after a slight erup-

* Vide Cases 15, 16, 17, 18.

tion, and cessation of all complaints, to ask leave to return home to their occupations and families; and where it has been thought that no danger would accrue to others, their request has been often granted; for the physician no more than the patient can foresee when these accidents shall follow; but it may be observed here, that in all these cases of my own knowledge, very repellent methods have been used in the beginning; and a more generous diet, or greater exercise afterwards, has seemed to contribute to this secondary eruption.

Before I conclude this chapter, it may be proper to observe, that inoculated patients, in some stage or other of the disease, may possibly be attacked with diseases altogether independent of the small-pox; such, for instance, as may arise from worms, or be the epidemick of the season, or such as the patient may by constitution be subject to; and some cases of this sort will be found among those annexed*.

* Vide Cases 17, 19, 21.

CONSEQUENCES of this Method of INOCULATION.

I Shall now consider the consequences that follow this very cool and repelling method, and how far the patient's future state of health may be affected by a practice so new, and opposite to all established theory.

I need not say how much it has been thought right, in most or all eruptive complaints, especially in the small-pox, to forward, by every gentle means, the efforts of nature in producing an eruption: and
on

on the contrary, how dangerous to check it, either by cold air, cold drink, or any considerable evacuations; or that the use of warm diluents therefore, and the lying in bed, especially if the fever and symptoms run high, or at least confining to the house, have been generally approved and recommended for the purpose. But when a practice so foreign to this, and almost totally different, is inculcated, it is no wonder if men's minds are alarmed, and those evils expected that were supposed to be the unavoidable consequences of it.

Experience, however, and instances of so many thousands succeeding by this method, without any considerable bad effects from it, either immediate or remote, are irresistible arguments for its support and justification, and the best proof of its utility and safety. I have said, without any considerable bad effects; for in reality I have seen none that deserve that name, if compared with what sometimes follow the natural small-pox, or frequently happen after the old method of inoculation.

Every one who has had any share in this practice, according to the common or old methods, will allow, that, after passing through the disease in a very favourable manner, their patients (children especially) were frequently liable to abscesses in the axilla and other parts, tedious ophthalmies, and troublesome ulcerations in the place of insertion; which though they could not be foreseen or prevented, yet frequently gave more pain and vexation to the patients, and trouble to the operator, than the disease itself had done: whereas on inquiry into the fate of those who have been treated the cool way, or this new method, I can say, that in more than 1500 there has been only one who has had so much as a boil in the axilla; and that was in a child who had an issue in the same arm, and which was at that time dried up; and I have

have only seen two very small superficial boils in others near the place of insertion; and these seemed rather to be occasioned by an irritation from the discharge, than from any other cause, and were all soon healed with very little trouble.

In a few instances also there has been a slough in the incised part, which has made a sore of short duration; but not one instance of an ulcer of any continuance. Such little breakings out too, and scabs, as are frequently known to succeed the mild natural small-pox, sometimes, though rarely, happen to those inoculated this way; and as they are of the same little consequence, are generally cured by the same method of a few gentle purges.

With regard to ophthalmics from this kind of practice, I have never had an example of one truly deserving that name; the coats of the eye have been a little inflamed in a very few, but they soon became clear, without any means used for that purpose. And I know but two cases where I thought the inflammation great enough to require bleeding, and not one where a blister was necessary. So that these complaints, heretofore so frequent and grievous, seem by this new method to be much reduced: a circumstance which, if it does not amount to a proof, admits at least of a fair conjecture, that the state of health is better here, than where those remains of putridity are so evidently existing in the habit.

Discoveries in physic, as in every other science, are in their infancy liable to censure and opposition; and as the present system of inoculation is of so extraordinary a kind, it would not be strange if a greater portion of both than usual should fall to its share. Accordingly, since no charge of fatality during the disease, nor instances of bad effects soon after the recovery, can be produced, recourse has been had to other measures to calumniate and dis-

on the contrary, how dangerous to check it, either by cold air, cold drink, or any considerable evacuations; or that the use of warm diluents therefore, and the lying in bed, especially if the fever and symptoms run high, or at least confining to the house, have been generally approved and recommended for the purpose. But when a practice so foreign to this, and almost totally different, is inculcated, it is no wonder if men's minds are alarmed, and those evils expected that were supposed to be the unavoidable consequences of it.

Experience, however, and instances of so many thousands succeeding by this method, without any considerable bad effects from it, either immediate or remote, are irresistible arguments for its support and justification, and the best proof of its utility and safety. I have said, without any considerable bad effects; for in reality I have seen none that deserve that name, if compared with what sometimes follow the natural small-pox, or frequently happen after the old method of inoculation.

Every one who has had any share in this practice, according to the common or old methods, will allow, that, after passing through the disease in a very favourable manner, their patients (children especially) were frequently liable to abscesses in the axilla and other parts, tedious ophthalmies, and troublesome ulcerations in the place of insertion; which though they could not be foreseen or prevented, yet frequently gave more pain and vexation to the patients, and trouble to the operator, than the disease itself had done: whereas on inquiry into the fate of those who have been treated the cool way, or this new method, I can say, that in more than 1500 there has been only one who has had so much as a boil in the axilla; and that was in a child who had an issue in the same arm, and which was at that time dried up; and I have

have only seen two very small superficial boils in others near the place of insertion; and these seemed rather to be occasioned by an irritation from the discharge, than from any other cause, and were all soon healed with very little trouble.

In a few instances also there has been a slough in the incised part, which has made a sore of short duration; but not one instance of an ulcer of any continuance. Such little breakings out too, and scabs, as are frequently known to succeed the mild natural small-pox, sometimes, though rarely, happen to those inoculated this way; and as they are of the same little consequence, are generally cured by the same method of a few gentle purges.

With regard to ophthalmics from this kind of practice, I have never had an example of one truly deserving that name; the coats of the eye have been a little inflamed in a very few, but they soon became clear, without any means used for that purpose. And I know but two cases where I thought the inflammation great enough to require bleeding, and not one where a blister was necessary. So that these complaints, heretofore so frequent and grievous, seem by this new method to be much reduced: a circumstance which, if it does not amount to a proof, admits at least of a fair conjecture, that the state of health is better here, than where those remains of putridity are so evidently existing in the habit.

Discoveries in physic, as in every other science, are in their infancy liable to censure and opposition; and as the present system of inoculation is of so extraordinary a kind, it would not be strange if a greater portion of both than usual should fall to its share. Accordingly, since no charge of fatality during the disease, nor instances of bad effects soon after the recovery, can be produced, recourse has been had to other measures to calumniate and dis-

credit the practice. It would be tedious to enter into a detail of the many false and ridiculous reports that have been spread against it. In general, the constitution is said to be injured; and the dreadful effects are to appear at some distant period; but at what time, or what kind of disease, nobody pretends to determine. To these general accusations it cannot be expected I should give other than a general answer; which is, that from the strictest observation and inquiry I have been able to make, those who have been inoculated in this way, have continued to enjoy as good a state of health as their neighbours; nay, many of them have thought their constitutions better after the process than before.

But it seems as if these opposers expected that inoculation should not only free the inoculated from the small-pox, and any early bad effects, but must preserve them too from all other disorders through the rest of their lives. To such I can say nothing: but if others who are more reasonable require further satisfaction as to the consequences of this method, I must desire them to make inquiry of those who have been inoculated under my direction.

Another charge against this method of inoculation is, that some have had the distemper afterwards in the natural way. What I have said under the head of anomalous small-pox, will, I believe, sufficiently account for the appearances which have occasioned these false reports; and if that does not satisfy, I can only add this positive declaration, that nothing of the kind has ever happened to any patient inoculated by me; and I firmly believe, no one has ever had, or can have, the distemper a second time, either in the natural way, or from inoculation.

The EFFECTS of this TREATMENT applied to the natural SMALL-POX.

THE very great relief which persons under inoculation experience from fresh air, cold water, and evacuations by stool, during the fever preceding eruption, soon determined me to make trial how far the like treatment might be useful to those who might be seized with the small-pox in the natural way; more especially in such cases, where, from the violence of the symptoms, a confluent kind was justly to be apprehended.

But opportunities of making experiments of this sort in a satisfactory manner are rare. First, because a physician, or even medical assistance of any kind, is not often called in till the eruption shews itself; when it is too late to expect all the good effects that might be hoped for from an earlier trial of this method; and secondly, because the first attack of the small-pox is so much like the beginning of some other fevers as not easily to be distinguished; though a diligent attention to the symptoms will generally, if we are called in time, enable us to form a pretty certain prognostic. For if the attack of the cold fit be pretty severe, and the subsequent fever unusually high; if a nausea and vomiting succeed, together with great pains in the head, back, and loins, especially the last; if a delirium, great restlessness, disagreeable taste in the mouth, and a peculiar foetid smell in the breath, or even if several of these symptoms are observed, the small-pox may with great reason be expected; and if upon inquiry, which should always be made, it appears that the patient has been in the way of infection, there will be little reason to doubt of it.

It may be objected, that notwithstanding the closest attention and inquiry, symptoms of the

like nature may precede fevers of other kinds; to which I answer, that some such cases, though few, have happened; and the treatment I am about to recommend has been practised not only without prejudice to the patient, but manifestly to his benefit.

But waving for the present all considerations respecting the treatment of fevers in general, I shall only relate what has occurred to me in respect to the natural small-pox.

In several instances where I have been concerned, and where the symptoms and other concurring circumstances induced me to think the small-pox was at hand, I have directed the like management as I recommend to inoculated patients*.

I have been called also to others at the time of eruption, where some pustules having already appeared, made the matter clear; and in every case of this kind, I have endeavoured to get the sick person into the open air, have generally given the mercurial and antimonial pill, and directed a laxative to be taken some hours after it, in order to procure three or four stools; and this method I have more particularly enjoined, and sometimes repeated where the kind has appeared to be bad, and where little or no relief has been found from the partial eruption; the symptoms continuing to be such as portended great danger. I have followed the same method during every part of the eruptive fever, intending thereby to abate its violence, to check the eruption, and prevent the conflux, and consequently the danger†.

The success attending this practice has hitherto exceeded my expectations; though it must be confessed, that as the symptoms; run much higher in

* See Cases XXIII. XXIV. XXVIII.

† See Cases XXV. XXVI. XXVII. XXIX.

the natural, than they are found to do in the inoculated disease, the relief has not been so considerable, and I have found it extremely difficult to persuade such whose complaints have been very severe, to quit their beds, and attempt to go abroad: indeed the exceeding feeble state they are sometimes in, sufficiently shews that great resolution is requisite to put this in practice.

Among those who have been treated in this manner under my own care and inspection, not one has died, and the number amounts to about 40. Some of the most remarkable cases will be subjoined, which will more satisfactorily explain the practice, and demonstrate its success.

The immediate sensible effects of going into the open air, are a very great abatement of heat upon the whole surface of the skin, which though but just before intensely hot, generally in a short time feels not much warmer than that of a person in health. The pulse from being very strong, full, and quick, becomes less hard and full, but continues quick; and I have sometimes observed it to intermit; which, however alarming it may seem, is not a dangerous symptom.

The pain in the head is always relieved, but that in the back and loins does not abate in proportion; and altho' it costs no little pain and trouble to persist in moving abroad under such circumstances, attended for the most part with great lassitude, yet the patients are sensible of the benefits they receive: and entertaining a good opinion of the usefulness of the practice, commonly behave with great resolution; and what is very encouraging, in general think themselves stronger.

Upon going within doors to rest themselves, the pain in the head grows worse, but is again relieved so soon as they return into the air.

The effects of the medicines are usually these:

If

If there has been much sickness at stomach, a vomiting frequently happens soon after the pill: this the patients should promote by drinking plentifully of some warm diluents; and till the fatigue occasioned by it is over, they certainly ought not to go abroad.

By this operation, and the stools which succeed, the feverish and internal heat, thirst, sickness, and pains, are for the most part considerably abated. The patients commonly complain of being very low and faint after these evacuations; but the most urgent symptoms being alleviated thereby, a disposition to receive nourishment hourly increases. They are then allowed to drink thin mutton or chicken broth, milk pottage, or tea, as the most grateful and refreshing cordial sustenance they can take. Sleep likewise now most commonly comes on spontaneously. But they are only permitted to enjoy this refreshment by day upon the bed; for I always dissuade them from going into it till night.

From the foregoing account it appears, that the fever preceding eruption, and the most grievous symptoms accompanying it, are often greatly mitigated by this practice; and I will here add, that the eruption is most certainly retarded, that is, it does not appear so soon after the attack of the disease, nor come out so precipitately when it has begun to appear, as it seemed likely to have done if the natural progress had not been interrupted; an effect, which, however dangerous it may have been thought, may be produced with the utmost safety, and clearly shews the utility of the practice. For it is evident from experience, that the later the eruption shews itself after the beginning of the disease, and the slower it comes out, the more mild and favourable is the subsequent disorder. And I am of opinion, that the eruption is not only retarded

tarded and protracted by this method, but likewise that it is in some degree repressed; having had strong reasons to apprehend in several instances, that the number of pustules which appeared at first, were by such repression actually diminished; and those that remained seemed larger, and of a milder kind.

What has hitherto been said on the subject, relates only to the disease in its eruptive state, which is certainly a very interesting period; but that which follows is not less so, though not always attended to so much as it deserves; for when the eruption is compleated, the symptoms abate, the patients seem relieved, and often to such a degree, that both they, and their attendants, flatter themselves with hopes of a happy event, and think it unnecessary to apply for any medical assistance; yet with all these hopeful appearances, the number and kind of the small-pox are frequently such, as would make a judicious practitioner apprehensive of much danger in the subsequent stages.

And where the practitioners themselves may see reason to doubt of the event, yet few or none of them have attempted, I believe, to do much towards preventing the danger; for, unless some pressing symptoms call for immediate relief, it is the general practice to wait till maturation comes on, and brings with it such a train of dreadful complaints, as are more than enough to employ, and too often baffle, the best abilities.

In this neglected interval, from the eruption being compleated, to the accession of the fever of maturation, and its concomitants (an interval which in point of duration is very different in different constitutions and kinds of small-pox); I will venture in general to recommend the same mercurial antimonial medicine as was prescribed in the eruptive fever, to be repeated at proper intervals, till the

the maturation advances; at which time it must certainly be discontinued: and these circumstances can be regulated only by those who attend, according to the urgency of the symptoms, and the strength of the patients: a cupfull of the following apozem should, if necessary, be now-and-then taken after the mercurial medicine, often enough to procure three or four stools a day, especially if the patient is costive.

Take cream of tartar, two drachms; of manna, one ounce; dissolve them in one quart of barley water, or the pectoral drink.

How far it may be safe or advisable for the patients to venture out into the open air during this stage of the disease, I will not yet pretend to say; but they will certainly be both refreshed and invigorated, by being kept out of bed as much as they can bear, without being overfatigued; and by fresh air let in sometimes through an open window.

As the violence of the eruptive fever with its attendant complaints must necessarily exhaust the strength and spirits, both should in this interval be recruited, by as much proper nourishment (such as has been mentioned in the former part of this chapter) as can be taken down without offending the stomach; and also if occasion requires, with medicines of a cordial and anodyne quality; for this is the time to recover as much strength as possible, in order to be better able to encounter and bear the pain and fever, which will most certainly happen, as the state of maturation advances.

Medicines, except what have been already mentioned, seem at this time unnecessary; and they would interfere with, and prevent the true relish for, food.

But for the best method of treating the small-pox in its most dangerous stage, I mean that of maturation, I must refer to the several learned and eminent

nent practitioners who have professedly written upon the subject, whose opinions and practice I neither pretend to correct or amend. I shall however take the liberty to recommend one medicine to be used in that stage of the disease, which I have found to abate heat, and allay thirst, in such a manner as to afford a very pleasing refreshment.

Take of the weak spirit of vitriol one part, of the sweet spirit of vitriol two parts ; mix. Of this the quantity of half an ounce may be added to a quart, or perhaps three pints of barley water, or the pectoral drink, or any other diluent, and to be drank of at pleasure.

I have at present nothing farther to recommend ; but what has been said, will, I presume, be sufficient with the cases annexed (in which the method will be more plainly described) to justify further trials of the cooling, repelling, and evacuating practice in the beginning at least of the natural small-pox, till the eruption is completed, especially where the physician has an opportunity of making the trial before the eruption appears, and can be pretty certain, or has good reason to conclude, that his patient's disorder is variolous. And the more violent the symptoms are in this stage of the disease, the more we should be induced to employ the means which have been attended with so much success, in the same stage of the disease after inoculation.

But it may be asked, if I was called to a patient in a bad confluent small-pox, and finding the eruption completed, whether, in such a case, I should venture to give and continue the use of the alterative and purgative medicine, and advise the patient to go out, if he can bear it, into the open air, in cold weather, or direct air to be let in through a

window even while the mercurial purge may be operating?

Before I give a direct answer to this question, let me first ask the most experienced practitioner, whether he knows any method of cure which may in bad cases be safely relied on, to avert the impending danger, and save his patients? The too well-known fatality of all kinds of small-pox, very clearly proves that he does not, and that no such method has yet been discovered. And if this be the case, surely a bold, and even hazardous practice, is very justifiable towards any such unhappy patients, who lie as it were under sentence of a cruel death, not to be prevented by what are called the regular and usual methods. But still it may be urged, that no impending danger, however great, can sufficiently justify the trial of any hazardous experiment, unless supported by some degree of *reason* or *experience*. Happy, indeed, it is, when we have these two guides before us; but when they are separated, the *latter* is certainly most to be relied on, and her I have endeavoured hitherto to follow.

For in the practice of inoculation experience has taught me, that after, as well as before, the eruption, persons may safely take mercurial purges, and go out during their operation (though I have seldom advised any to do so) into the cold air, in inclement weather, without suffering the least harm or subsequent ill consequence from it. And by this experience I was led, though with great caution, to try whether the same practice might not be safely employed in the cure of the natural small-pox, as well as the inoculated; nor have the trials been unsuccessful; for though among the patients I have treated in this manner, some had confluent sorts, yet were the complaints unusually moderate throughout the whole progress of the disease, and the maturation was completed, without such troublesome
and

and alarming symptoms and events, as might be expected under any other known method of treatment; nor did any secondary fever ensue.

I would not, however, be understood to entertain so good an opinion of this method, as to insinuate that it will save all who have the bad confluent kind; too many of these are incurable; but I am not without hopes, that it may give a chance of recovery, hitherto untried, to many; and even if this alterative and evacuating course in the early part of the disease should not succeed, so as to avert the approaching danger, I think there is great reason to suppose that nourishment, cordials, and opiates, which may be wanted in the state of maturation, will be administered with more advantage and security after it, than if that method had not been previously taken.

It seems necessary, however, to declare, that nothing which has been said is meant to relate to practice in bleeding or purple small-pox; though very cold repellent methods may perhaps deserve to be tried in these hitherto fatal cases, provided it can be done early; but the mercurial evacuating course seems quite improper.

Upon the whole, what has been said on the natural small-pox, must wait the award of time and experience, the only tests of the utility of any practice; for I have lived long enough to have seen several instances where very ingenious and well-meaning men have been greatly mistaken, by relying too much on the first impressions made by a few successful experiments.

C O N C L U S I O N.

BEFORE I dismiss the subject, it may not be improper to give some account of the motives that induced me to adopt this method.

During the course of many years practice of inoculating in the former usual method, I generally committed to writing the most remarkable occurrences, to have recourse to. Among these, I had recorded some cases, which proved that those who had suffered most, were, in general, such as had been kept warm, and nursed with the greatest tenderness and care. These facts disposed me to think favourably of a cooler manner of treating the disease, and made me attentive to the reports of such a method having been practised in some parts of this country with great success, though too extravagant at first to deserve credit.

The reports, however, of this practice still gained ground; and, upon the strictest inquiry, I found they were for the most part true, and that such who were treated in this way, passed the distemper in a more favourable manner than my own patients, or those of the most able practitioners in the old method of inoculation; also, that the inoculators in this new way enjoined a stricter regimen, as to diet, than I had hitherto thought necessary; and that they frequently brought their uninfected patients into the presence of those who had the disease, and inoculated them immediately with fluid matter, taken on the point of a lancet, and by a very slight puncture or incision; applying no dressing or covering afterwards.

This way of performing the operation pleased me, as far as related to the slightness of the incision, and the use of fresh matter; for I had (in common with other inoculators) sometimes failed of infect-

infecting, by using a thread that had been kept too long in a phial: but the circumstance of bringing the person to be inoculated into the presence of one who had the small-pox seemed hazardous, lest there might be an accumulation of infection.

All doubts, however, were at last removed by the authenticated accounts that I received of these particulars, and of the good success that attended the practice; and I began to try it in January 1765; when, after having directed a strict regimen and some mercurial purges, I inoculated with fluid matter, proceeding with much circumspection and attention; my patients being exposed to the open air in that cold season. The great advantage they received from this treatment was soon apparent, and more than sufficient to encourage my continuance in the practice; till repeated experiments induced me to think, that instead of supposing the fever in the small-pox to be the instrument employed by nature to subdue and expel the variolous poison, we should rather consider it as her greatest enemy, which, if not vigorously restrained, is apt to produce much danger; and that all such means should be used as are most likely to control its violence, and extinguish the too great fervor of the blood. Pursuant to this opinion, besides keeping my patients in the open air, which I had learned from others, I first directed the mercurial and antimonial medicine, and the laxative course in the eruptive state; the manner of administering which, and the success attending, has been already related.

It may perhaps appear singular that bleeding has neither been once mentioned or directed in the course of this work, though by general consent it is allowed to be the most efficacious remedy in all inflammatory cases. To this I can only say, that the regimen and medicine above prescribed commonly reduce the patients so much as to render bleeding
unnecessary.

unnecessary. And in the natural small-pox it seemed most reasonable to adhere, as strictly as possible, to those measures which had contributed apparently so much towards passing so easily through inoculation. I doubt not, however, that cases will arise, in which bleeding may not only be safe, but extremely salutary.

It will, I hope, be needless to tell the reader, that I have disclosed the whole of what I know with certainty relative to this process, as the regimen, medicines, different types of the disease, the rules of prognostic, and various events, &c. are fully and faithfully related, according to the best of my judgment and experience. And I believe, if the method now recommended is carefully pursued, it will be found to answer with a success at least equal to any yet discovered. Nevertheless it is reasonable to suppose that further experience may produce some improvements; yet when it is considered how short a time is required for preparation, how few medicines are to be taken, those medicines, neither nauseous in themselves, nor violent in their operation, of a kind likely to be beneficial to most constitutions, and hurtful to none, unless injudiciously administered, that the disease is usually so mild as to require little or no confinement (the complaints of far the greater number being, that they have too *little* of the distemper) and that the disagreeable consequences which sometimes happened after the former method of inoculation are likewise by this most commonly obviated; I do not see that much alteration can be even wished for. That which appears most likely to be made, is in shortening the time of preparation; for as I have often been obliged to inoculate without any, and have always had the same success, it has inclined me to think, that much, if not the whole, of this process may be dispensed with, except in very full habits, or where
other

other particular circumstances may require it. But in all these cases, from the insertion of the matter to the time of the eruptive complaints, the patients have been kept to a close observance of diet, and the use of the preparatory medicines, proportioned as well as I could to their condition: for I durst not, by way of experiment, dispense with the use of measures that had been hitherto so successful.

Should it be asked then, To what particular circumstance the success is owing? I can only answer, that although the whole process may have some share in it, in my opinion it consists chiefly in the method of inoculating the recent fluid matter, and in the management of the patients at the time of eruption. If these conjectures should be true, perhaps we shall be found to have improved but little upon the judicious Sydenham's cool method of treating the disease, and the old Greek woman's method of inoculating with fluid matter carried warm in her servant's bosom.

CASES.

C A S E S.

C A S E I.

Nov. 23d. **A** Very strong, fat, middle-aged man was inoculated with fluid matter, from a person pretty full of the natural small-pox, and near the crisis.

26th. He came to me, that I might inspect the arm, which then appeared to be certainly infected, and very forward,

*no unfa-
vourable symp-
tom -*

28th. He came to the house, and informed me he had been taken very ill on the 26th in the evening, and continued so all the next day. His complaints had been, great pains in his head and back, with heat, thirst, and restlessness. He was at this time, however, pretty well; but on inspecting the arms, they appeared much inflamed for a considerable space round the incision, and the erysipelatous appearance gradually extended itself over the greatest part of the arms between the elbow and shoulder. He now complained only of slight flying pains in his head and limbs, but without the least degree of fever: after a bad night's rest, several eruptions were discovered on the hips, and one on the neck. Some of these matured, others dried away; and, upon the whole, the procedure was such as would not by any have been called variolous, if unattended with other circumstances.

C A S E II.

Nov. 23d.] A healthy strong man, inoculated at the same time, and from the same person with the last

last, accompanied him also on the 26th, when the arm of this patient appeared in a very doubtful state respecting the infection.

On the 28th, when he came to the house, the skin at the incision was discoloured, felt hard, seemed thickened, but did not appear inflamed; nor did he allow it had itched, or that he had perceived any alteration in his health.

Things remaining in this state, I inoculated him again on the 30th in the morning, being the eighth day from the first inoculation. On the evening of the same day he complained of chilliness, attended with pain in his head and limbs, and passed an uneasy night. These complaints lasted in a very moderate degree for two days more, but without the least appearance of a fever. A very few pimples were discovered upon the decline of these symptoms, but they soon vanished without maturing.

*The inoculation
effectual, &c
altho' little or
no eruption ap-
peared*

C A S E III.

Nov. 23d.] A third patient, a young man twenty years of age, was inoculated with the two last. I had not seen his arm from the time he was inoculated to the 28th, when he came to the house in company with the others. He said the incised part had itched very much the first three or four days, but it now appeared nearly in the same state as the preceding.

*The same with
the above*

He was also inoculated again on the 30th. But as the succeeding complaints and doubtful eruption in this case bore an exact resemblance to those of the former, it is needless to repeat them.

Nothing happened to either from the second inoculation.

C A S E IV.

1765, May 5th.] A man aged twenty-four was inoculated; after which he went to visit a relation,

H

till

till it should be thought proper for him to come to the house, which I directed him to do on the 11th, if he should continue well till that time.

He took with him two calomel pills, one of five and the other of ten grains. He was ordered to take the least on the 8th, the other on the following night, and an ounce of purging salts next morning.

I did not see him till the 11th, when he came to the house: he was then perfectly well, but said he had been a little giddy for the last day or two, and that his head ached very much the preceding day for about an hour, insomuch that he thought he must have come over; that his arm had itched very much, and the purge worked very briskly.

Upon examining the arms, both incisions appeared to be considerably inflamed, and looked just as is usual on the approach of the eruptive fever, which I had not the least doubt would soon happen.

On the 12th he complained of some pain in the right shoulder, and under the arm, which he said was stiff, and felt as if it was swelled. However, he continued perfectly well, and free from all complaints, to the 15th; the arms appearing as usual when the distemper is attended with very few pustules; that is to say, not quite free from inflammation, but with a slight one.

The case being not so clear as could be wished, in order to be thoroughly satisfied, I inoculated him again, taking particular care to infect the part well.

On the 16th in the morning he took a dose of Inf. Sen. and Manna.

He continued quite well, and no itching, or signs of infection, appeared from the last inoculation.

C A S E

*The inoculation
effectual altho
so little appeared
as to make it doubtful
whether he
had taken it*

C A S E V.

May 3d.] A man of 44 was inoculated. I saw him every day, and it was easy to perceive that the infection had taken place very early.

*early inflammation
so mild that
no eruption ensued*

On the 7th it appeared so forward, that I ventured to prognosticate he would have a very early and mild disorder, and no eruption.

On the 8th he complained of a pain in his head and back, and that he felt a general uneasiness, attended with a loss of appetite, which at other times was very good. He continued complaining in this manner that whole day; but on the next found himself pretty well, and continued so without any other illness. The inflamed appearance on the incision abated from this time.

His health returned, and he still remains perfectly well.

C A S E VI.

A middle-aged man was inoculated at the same time; whose case in every circumstance so nearly resembled the former, as to render it needless to enumerate the particulars.

*The same as
above.*

Both were inoculated a second time without any eruption or signs of infection happening in consequence of it.

C A S E VII.

Dec. 5th.] A healthy man of 38 was inoculated. On the 7th he called on me, when his arm itched very much, and shewed certain marks of the infection having succeeded.

The same

The inflammatory appearance was then considerably abated, and the incision seemed disposed to heal. He felt no uneasiness on the part, nor had he any illness.

On the 12th and 13th he complained of pains in his head and limbs, as also of stiffness under his arms, which I esteem one of the most certain proofs of the infection having taken place. There was no alteration in the pulse, nor any other sign of a fever; a few pimples about the neck and arms followed these complaints, yet not such as I should have esteemed variolous on any other occasion; for some soon disappeared; and others, which remained long enough to have a little matter formed in them, proceeded to this state with great irregularity.

He was inoculated again, but without the least effect.

C A S E VIII,

A man between 50 and 60 was inoculated about four in the afternoon: on the morning of the third day after the inoculation I first saw his arms, when they shewed uncommon signs of infection, being already much inflamed; and upon enquiry, I received from him the following account: that on the same evening he was inoculated, he felt an uneasiness and numbness at and near the place of insertion; and that the day following these complaints increased, and spread up to the shoulder of one arm, which was very stiff and numbed; that the incision had itched several times, and his arms felt as if he had been bruised by a blow with a very large stick. And on the preceding evening, which was the second from the inoculation, his head had been giddy and in pain, accompanied with some chilly fits; but all these sensations went off without any other illness. He had rested well, and never thought himself in better health.

From this time I saw him at different times every day, and he continued in perfect health; only sometimes, especially towards evening, he said he felt

*a great numb-
ness or stiffness
in the arm on
the day of inocu-
lation.
increased the
following day
but no bad effects
ensued.
the small pox
appeared as usual
& favourable*

felt as if he had drank too much. The arms were much inflamed, but on the 6th and 7th day they altered their colour to a darker hue, and the inflammation and hardness were evidently abating. He now desired to go a journey of about 20 miles on business; and this I consented to, from an absolute confidence that he was secure from any alarming attack: having first enjoined him not to go into company where he might risk spreading the infection; for his breath at this time had that peculiar offensive smell which accompanies the disease.

He returned the following day, being the 8th, in the afternoon, making no complaint but of hunger; yet said his head had ached the preceding night after his journey. His arms were now rather more inflamed, which I attributed to the friction they might have in the chaise; but from this time all complaints of every kind ceased. His arms soon became quite well; he took his first purge on the following day, a second on the 11th, and returned home on the 13th from the inoculation, without having a single eruption of any kind.

It is remarkable in this gentleman's case, that being so well he did not choose to live with those who had the distemper, but continued in a lodging with his wife, who accompanied him by way of nurse, in full confidence of having had the small-pox many years since. However, after they got home, she fell ill, and had the distemper in a very clear but favourable manner, and doubtless caught it of her husband.

C A S E IX.

A young gentleman, aged nineteen, was inoculated June 2d, 1765.

On the 3d he rode out with a friend in an open chaise, and it being stormy weather returned home wet. I called on him next morning, and found him

him in bed, complaining that he had rested ill, felt shooting pains in his head, his throat a little sore, thought himself feverish, and that he had taken cold the preceding day. All this seemed very probable: his pulse was too quick, though the heat not considerable, and he was in a moderate sweat.

He rose about ten, and kept within doors the whole day, complaining of weariness, slight pain in the head and about the shoulders; also that the incised parts felt uneasy, and itched.

On the 5th he thought his cold considerably better, and ventured abroad. His arm appeared certainly infected, and very forward: insomuch that I suspected he would have no more illness in consequence of the inoculation.

On the 7th the inflammation on the arm was considerably abated, and the incision seemed disposed to heal.

Apprehending from these circumstances that nothing more was to be expected from the operation, he was inoculated again in the evening, from a person who had the distemper pretty full, though of a distinct kind, in the natural way.

No marks, however, of infection ensued from this last operation; and he continued visiting with me many patients in all stages of the disease: so that it is probable he was then in more danger of infection than he will ever be again.

C A S E X.

Dec. 19.] A healthy florid young man was inoculated in both arms; and soon after on the same day he felt a disagreeable numbness and stiffness, beginning at the incision in one arm, and extending as high up as the shoulder. That night at going to bed he took five grains of calomel in a pill. On the 20th the same kind of sensation in the arm remained, extending also to that side of the head,

numbness & stiffness the day after inoculation.

a calomel purge,

numbness increased

head, which was in some pain. These complaints continued this day and the next. I ordered him to take the same mercurial pill at going to bed.

*mercurial
pill repeated*

22d. Another indifferent night, with the same complaints, and a stiffness in both shoulders. The pulse appeared to be rather quickened, but without any such increase of warmth as was sufficient to be called fever. The incisions were unusually forward.

*and
long
incision*

23d. In the morning I was told he was better, and had taken a ride to visit his mother at about ten miles distance; also that he had several pimples, which were believed to be the distemper.

In the afternoon he returned, when I found there were several pustules out, which had the appearance of being true small pox; and his arms were as forward as is usual at the time of the eruption. All his complaints were now gone off, and he seemed quite well.

24th. Gone abroad for his pleasure.

25th. He called on me, and the pustules having advanced properly towards maturation, I ordered him immediately to the house, where he remained perfectly well, and the pustules, which were about twenty, matured very kindly.

27th. He took a purgative, which operated moderately. On the 28th he returned home in good health, and has continued so every since.

C A S E X I.

Two men were inoculated at the same time, the one about 40 years of age, corpulent, and subject to the rheumatism; the other between 50 and 60, very thin and healthy.

I saw both these patients on the third day, when the places of insertion were in each so very much inflamed, that I was pretty certain they would

*4 day
main
infection
as
resemble
pox*

*inflammation so great on the 3rd day that
it was pretty certain scarce any eruption
would ensue*

scarce

scarce have any eruption, and acquainted them with my opinion; both made complaints of itching and uneasiness in the part; there was, however, this difference, the elder said he had felt a numbness and smarting from the time of inoculation, particularly the following night; that his head had been in pain, and he had had several chilly fits. The other complained that his arms felt hot and itched, but he was very well. They both came to me on the sixth day, when the inflammation on the arm of the elder was considerably abated; and he said from the time that I saw him last, he had remained free from any complaint, except a slight uneasiness on the parts infected. The incisions of the other were still in an inflamed state; he said that his head had ached, and that he was very chilly the preceding night; both these symptoms continued for two days more; but the attacks were irregular, lasted but a very short time, and there was not the least appearance of fever. The other held perfectly well, and all signs of inflammation on the arms of both soon disappeared.

They both remained several days in the same house, and kept company with others in different stages of the disease; the elder of the two was inoculated again, but without the least signs of the infection taking place, and both remain in good health.

C A S E XII.

A gentlewoman turned of 50, of a corpulent habit and clear complexion, was inoculated about noon. On the following morning she informed me that the inoculated parts, and more especially one arm, had smarted very much, and felt numb up to the shoulder, and had been sufficiently troublesome to disturb her rest; upon inspecting the parts, they were found much inflamed, and a little

a
the
in
the
-le
i.
for
be
e
the
ap
m.
J
day
pat.
a l
m

the elevated. These kinds of feelings were complained of that whole day, and towards night her head ached; but she had no increase of heat, or alteration in the pulse. On the third morning there was a flushing on the skin round the puncture on each arm nearly the breadth of a sixpence; on applying the finger, it felt hard about the middle; and upon the whole, the appearances of infection were as evident as are usually observable on the 9th or 10th day. I therefore ventured to assure her, that the disease would pass over in a very slight manner, and most probably without any eruption; and the event justified my prognostic.

*early appearance
of inflammation -
a certain indication*

She complained a little of pain in her head for several evenings, and the inflammation on her arm increased; but on the 6th day it began to turn to a yellowish brown, and every inflammatory appearance wore off: she remained perfectly well, living with those who had the distemper, and in an infected house, without any illness.

C A S E XIII.

Jan. 9th] A strong healthy man, aged 24, was inoculated. The eruptive complaints began on the 8th day, ran pretty high, and on the inoculated parts of each arm he felt very great and unusual pains. On the 10th a true erysipelatous swelling attacked one arm, and extended from the shoulder to the elbow; the other was also affected in the like manner, but not so considerably. In the evening of the same day he complained of great pain and soreness about his stomach, and at this time the whole surface of the skin was nearly covered with a rash and petechial spots of different colours and sizes.

*on the 10th day
throat & ear pain
soreness in
stomach - a disten-
ed with a rash
or pimples resembling
a confluent pox*

*spots appear
of a purple &
livid colour*

[58]

What I distinguish by the name of rash, were pimples much resembling the confluent pock, and rising above the skin; the petechial spots were interspersed, and even with the skin; some of these were small like flea-bites, others were near as large as a silver penny; some were of a very dark purple, and others of a livid colour. I observed them carefully, assisted by a good convex glass, and found the appearances singular and alarming. But as the fever was not high in proportion to such appearances, the head and back free from pain, and no great weakness attended, the event seemed to be the less doubtful. The patient drank a basin of white wine whey at going to bed, and I found him pretty well in the morning: the erysipelas began to be less fiery, and put on a darker hue; a few large distinct pustules of real small-pox soon discovered themselves, and from this time all went on very well; the arms indeed were of a livid colour for some time, but gave the patient no pain or uneasiness, so that he passed through the whole process perfectly well in every other respect.

C A S E XIV.

A healthy young woman 20 years of age, after having taken two of the preparatory powders, had a slight fever accompanied with sickness at the stomach; which were followed by an erysipelatous rash; on this account inoculation was postponed four days, when the rash was totally gone. On the 7th day from the inoculation she began to have the eruptive symptoms, which were accompanied with more fever and pain in the head and back than is usual, also very great sickness and vomiting; these were succeeded by an universal rash, of the same kind as had happened before; in this situation

*vomiting & sickness
on 7th day &
succeeded by an
universal rash -*

on she was ordered to keep her room, and the following medicine directed:

Take compound powder of crabs claws, one scruple; emetic tartar one grain.

This operated moderately by vomit, discharging some bile, and also twice by stool. The stomach was much relieved, but the rash remained, and put on so much the appearance of a confluent eruption, that I could scarce be satisfied it was not so, though I had seen in the same person, but a few days before, a smaller degree of the same rash. What made the case more doubtful was, that the fever still remained pretty high; and her head and back were not much relieved by this eruption. In this situation I did not think it adviseable to expose the patient to the open air, but directed only a saline mixture, with compound powder of crabs claws, and that she should keep her room, but not her bed.

On the 10th a few distinct pustules were to be distinguished, the rash began to look fainter and the whole terminated in a very favourable distinct eruption, without any particular accident: the skin peeled off universally, as is not uncommon after a rash.

C A S E X V.

A man aged 44, on the sixth day after inoculation, began to complain of pains in his head and back, and of being frequently very cold. These lasted with great severity, insomuch that he took the alterative pill, a purging draught, and kept much in the air till the 9th, when about ten pustules appeared, and his complaints ceased. These seemed likely to dry away without maturing, which is not unfrequently the case, where there are very few.

*regimen for
this case*

*appearance of
a confluent pox*

On the 12th he took a purge; his arm remained considerably inflamed; but as he was very desirous of going to a relation's house, where he proposed to be aired, I consented to it.

On the 16th I was told he had been much indisposed since his removal, and that he wished to see me.

On the 17th I visited him, and found a considerable number of pustules, to the amount of about forty, in the face, of true small-pox. The account he gave me was, that he found himself very ill on the evening after his removal, and that he perceived the pustules the next morning. This was on the 14th day from the inoculation, and the forwardness they were in agreed well with his account. His arm continued much inflamed, with many pustules near the incision.

C A S E XVI.

A healthy young man was inoculated December 6th, 1766. On the 11th and 12th he was cold and hot alternately, and complained of great pains in his head, back, and limbs.

The 13th he was much easier, but still felt pains in his head and back. The inoculated parts, which, from the operation till this day, I had no opportunity of seeing, shewed evident signs of infection; but the skin at the incision was pale, not elevated, nor did a thin fluid appear under the cuticle, as is usual when the progress of infection is favourable; neither had he felt much uneasiness about the incisions, or stiffness in the axilla.

14th. He was free from all complaints; the discolouration on the arm had spread wider, and two or three pustules were discovered near the place of insertion.

15th. Many pustules appeared in different parts, about one hundred.

16th.

16th. The pustules were properly advanced, and the man seemed to be perfectly well. But there were now some appearances in the arm which I was dissatisfied with: for the inoculated part was covered with a great number of very small pale-coloured confluent pustules; and the incision, instead of being elevated, was depressed, and of a livid colour in the middle: this sometimes happens, and denotes an eschar and ulceration at the conclusion of the disease.

17th. He was seized in the middle of the day with a shivering fit, succeeded by great heat and pain in the head, back, and limbs, which continued all the following night. He likewise felt considerable pain at the incision, and in the shoulder extending to the axilla.

18th. In the morning he complained of great pain at the incision up to the shoulder and the axilla of one arm. The pulse was very quick, and the fever high. In this situation I made no doubt but there would be a second eruption, and therefore persuaded him to get up and go into the air, and directed an infusion of fena and manna to be taken immediately.

This operated four times, and he was considerably relieved of all his complaints; but fresh pustules now made their appearance on the face and other parts, to the amount of double the number at least of the first. From this time he remained quite free from fever, and every other complaint; the last pustules, as well as the first, maturing in the most favourable manner. But what is very remarkable, both crops of pustules ripened nearly about the same time; for the progress of those which came out first seemed to be retarded by the second eruptive fever, and the latter pustules advanced quicker than usual.

C A S E XVII.

June 2d. Twenty-two persons were inoculated, who lodged at two neighbouring houses.

On the 4th in the evening one of them, a man aged 30, had a shivering fit succeeded by a fever, with pain in the head, back, and side, which continued all night.

5th. In the morning, when I first visited him, the pulse was very quick, full, and strong, and the former complaints remained, but I found him walking about the house. On inspecting the incisions, both were quite well; while those of every one of his associates, which I saw at the same time, shewed evident marks of infection.

This patient had been very much in the way of infection, and I suspected that he was going to have the small-pox in the natural way: I therefore directed the mercurial and antimonial pill to be taken at night, and that he should go into the air as much as he could bear, but not go into bed.

6th. In the morning I was informed that he had been sick and vomited, without having a stool; and that all his complaints remained, though not quite so violent. I prescribed half an ounce of Glauber's salt and half an ounce of manna dissolved in water-gruel, to be taken immediately.

In the afternoon I found him in bed, but was told he had been in the air, and that the purge had operated four times. He was now disposed to sweat, and his pains were abated; but the fever remained as before, with a white dry tongue; he had a troublesome cough, difficult respiration, and a great oppression at his stomach, but there was not the least sign of infection in the arm.

7th. In the morning he was much in the same state, only weaker. I prescribed a salt of wormwood mixture with Mindererus's spirit, and oily mixture for his cough, and one grain of emetic tar-

tar

tar mixed with 10 grains of compound powder of crabs claws to be taken in the evening.

8th. He had four stools in the night, sweated pretty well, and got some sleep; but he coughed much, breathed with difficulty, expectorated some thin frothy phlegm, and complained of great pain in his breast and side. Eight ounces of blood were directed to be taken away; the antimonial powder was repeated, with an addition of one grain of calomel; and he was directed to drink frequently a cup-full of pectoral decoction, to a quart of which was added one ounce and a half of Mindererus's spirit.

9th. The blood taken away yesterday was very fizy, the pain in the breast and side much abated, but the cough very troublesome, and the expectorated phlegm streaked with blood. The inoculated parts were now discoloured, shewed evident signs of infection, and that we should soon have the small-pox to encounter together with the peripneumonic disorder.

10th. Very restless all the night, coughed much, and with great difficulty expectorated brown viscid phlegm. The bleeding was repeated, and the use of the antimonial powder and other medicines continued; which had every day procured some stools, and supported a constant breathing sweat.

11th. The blood was still found fizy, and the fever, cough, difficulty of respiration and expectoration, were increased. The progress of infection in the arm was slow, but shewed, however, that the eruptive fever would soon come on; and I was apprehensive that it would be so confounded with the peripneumonic disorder as to cause much perplexity. I determined nevertheless to attempt to relieve the latter by whatever means I could, and wait the event; and therefore ordered more blood to be taken, a blistering plaster to be applied between the
the

the shoulders, and a small quantity of gum ammoniacum to be added to his pectoral medicines. In the evening I was informed that all the troublesome symptoms were considerably abated.

It must here be noted, that all the company, who had been inoculated at the same time, were now ill, and most of them had some eruptions.

12th. He had had more rest; but though most of his complaints were relieved, yet the fever still continued, and he expectorated with difficulty some very dark-brown phlegm, so that no alteration was made in his medicines.

The appearance on the incisions spread, but did not look as usual when the eruptive complaints are begun.

13th. The fever, pain in the side, cough, and difficulty of expectoration, being again increased, I ordered a vesicatory to the side, and some oxymel of squills in a pectoral mixture.

14th. The fever and pain of the side were abated, and he had obtained some little sleep, which was however much disturbed by sudden startings. The skin at the incisions had an unusual appearance, not easily to be described: and instead of being inflamed, as it usually is, where the progress of the infection is favourable, and not interrupted by some extraordinary accident, it was of a pale hue.

15th. He had rested ill, and the cough was so troublesome, that I ordered more blood to be taken, and the medicines to be continued. The incisions this day looked like pustules irregularly shaped, and a fluid appeared under the cuticle.

16th. All symptoms were more moderate; two pustules were discovered in the face, and those at the incisions seemed tending to maturation.

17th. All complaints much easier; the pustules at the incisions were more elevated, and had matter

ter in them ; but the others were but little advanced, and looked pale.

18th. He was in all respects so much better, that he ventured to ride out on horseback, and I was released from my attendance ; nor did I see him afterwards till he called at my house in good health on the 5th of July. But he then informed me, that in the afternoon of the 19th of June, the day after I took my leave of him, he had been extremely hot and feverish ; was relieved on the 20th from all feverish symptoms, and discovered a great number of pustules, which rose, filled, and ripened without any further illness ; so that he did not think it necessary to send me any notice of them. Looking in his face, I saw about thirty marks of small-pox, which confirmed the truth of his report.

I have also since received a very satisfactory account that many pustules in his face and other parts, which came out after the time I saw him, stayed a proper time, and matured completely.

C A S E XVIII.

A middle-aged man, on the sixth day after he had been inoculated, complained of pain in his head and back, and had a slight degree of fever. The complaints remained till the 8th, when there appeared some eruptions on the face which I took to be varicellous : but it is to be noted, that having lived pretty freely, his face was very red and full of pimples ; and neither the preparation nor medicines had much altered that appearance ; so that it was no easy matter to distinguish between those which were habitual to him, and the fresh ones. The arm at this time was very considerably inflamed, as is usual about the time of eruption.

On the 9th he was perfectly well, and no more eruptions shewed themselves.

K

Having

Having had several patients who undoubtedly passed through the distemper with no more illness than this man had felt, and sometimes even without any eruption, I really thought that the affair was over.

On the 10th he took a laxative draught, eat a piece of mutton, and drank some ale. On the afternoon of the same day I found him complaining of a pain in his head, which he thought was occasioned by his venturing abroad during the operation of the purge. He had now more fever than at any other time before; however, as he averred that his complaints were such as he usually felt from a slight cold, I did not apprehend any thing more.

On the 11th in the morning he was still much indisposed, and had rested ill. In the evening of the same day I found him much better, but he said there were more pustules on his back. These I did not see.

Next morning I found he was gone to a friend's house, having left word that he was quite well, and I should hear from him if there was occasion.

On the 14th I was desired to visit him, when I found a moderate number of fresh pustules on the face and limbs, and in such forwardness, that I was convinced they had been out ever since his removal; which indeed was confirmed by the account he gave me: these matured kindly, and he remains in good health.

C A S E XIX.

A gentleman's son in perfect health, between four and five years of age, on the third day after inoculation voided a long round worm alive, after having taken on the preceding night a dose of mercurial phylick. No signs of worms had hitherto been

been observed in him, and he afterwards seemed to be quite well, till the symptoms which usually precede the small-pox came on.

After a very moderate illness, an eruption of about twenty pustules succeeded, and all complaints then ceased; so that on the 4th day after the eruption, I proposed, and was permitted, to discontinue my visits for the present. I called again however on the 6th day, and found him well as usual, and at play, the pustules being then nearly matured.

I was informed, however, that in the night of the 4th day, he had been hot, feverish, and restless; was very well the day following, and hot again at night, but in a lesser degree; so that this slight illness did not then give the least alarm. But on the 7th day early in the morning I was called up to visit him as soon as possible, and was informed, that in the beginning of the night he grew extremely hot and delirious, and soon became stupid, drowsy, and senseless, in which condition I found him, grating his teeth, with convulsive motions about the mouth.

The pustules were at this time quite ripe, and looked, as they always had done, extremely well. His pulse was very quick, though the heat was now moderate, and the respiration free and easy; but he was so comatose as not to be roused, even so much as to open his eyes, by any disturbance that could be given.

In this alarming situation I desired the assistance of the physician, who on the other occasions had usually attended the family. At our consultation, which soon followed, it was agreed, that as the small-pox were very few in number, had always looked well, and were now completely matured, the present symptoms must be occasioned by worms, or some irritating cause in the bowels.

With this view a dose of rhubarb and calomel was immediately prescribed and exhibited, though we were obliged to open the mouth by force, and this not without some difficulty. The operation of this medicine was accelerated by a clyster, and a large foetid slimy stool, followed by some smaller liquid ones, was procured that afternoon.

The child, however, seemed to be almost totally insensible during this time, nor did he yet appear to be in any respect relieved by these evacuations: blisters therefore were successively applied to the back, head, and legs, and sinapisms to the feet; leeches were likewise fixed to the temples, and rhubarb with calomel, after some little interval, again directed; tin medicines being given between whiles.

By these means, though not till a considerable quantity of slimy and extremely offensive faeces had been discharged, some signs of amendment appeared. But the child still remained in some degree comatose till the fifth day from this attack, after which the progress of amendment was very quick, and in two or three days he got quite well, and has so continued.

C A S E XX.

In May 1766, I was desired to visit a considerable farmer, aged 68, to give my advice for a complaint in his legs.

About two years before he had been seized with a numbness and coldness in both legs and thighs, which it was apprehended would end in a palsy. For this disorder he took many medicines, and both his legs were blistered, by which he found relief; but from this time the legs were affected with troublesome itching and burning pains, attended with a sharp serous discharge through innumerable

merable excoriations. These complaints destroyed his rest, and made him unhappy.

After relating his case, he told me, that as almost every body in his neighbourhood, who had not had the small-pox, was either under inoculation or preparing for it, he could scarcely expect to escape the infection, and had therefore a strong desire to be inoculated, and that his wife, of the same age with himself, was likewise desirous of it.

This proposal induced me to examine the present condition of his legs more strictly. They were now, he said, in their best state; that is, not so full of pain as usual; they were dry and scurfy. His face was likewise scurfy, and of a settled deep red colour; the consequence, as he told me, of a repeated Erysipelas in it, and not of any intemperance.

Upon considering the case, and reflecting that the preparatory course of diet and medicine would probably amend the condition of his legs, I encouraged him to pursue his intention, and both he and his wife, after a fortnight's preparation, were inoculated on the third of June.

On the 9th both made some slight complaints; and on the 12th the wife grew better, on the appearance of a very few distinct pustules, which matured afterwards in the most favourable manner. But the man still complained of pain and weariness till the 13th, when he grew easier in that respect, and felt a smarting pain in his legs, which were very red, and had several pustules on them. Towards evening they grew more painful, more swelled, and a further eruption was discernable, though not easily to be distinguished, by reason of their diseased state.

He slept very little this night; but on the 14th I found him free from fever, and pretty well in all respects, except the pain in his legs; on which,
and

and under the hams, a great number of distinct, but almost coherent pustules appeared. There were several also in the neck and face, but very few on the body or arms. He had all along been advised not to stir much, but had taken greater liberties of walking about than I had allowed.

15th. He had not slept a minute during the night. I found him up and walking about the house, complaining much of pain, but saying that in other respects he was well; but he was now rather cool than warm, his pulse very low, his aspect languid, the colour of the face inclined to livid and pale, and he complained of faintness and sickness. I could not avoid being alarmed. The legs also were swelled considerably, but not inflamed. I therefore ordered him instantly to bed; and as the tension was great, applied a cataplasm of bread and milk (being what was nearest at hand) all over each leg, and directed the following medicine to be taken as soon as possible.

R Mithrid. ʒss. Decoct. Cort. Peruv. ʒij. Tinct. Cort. Peruv. simpl. ʒij. M. f. haust. quam primum sumend. & sexta quaque hora repetendus.

R Sal. Absinth. ʒj. succ. Limon. ʒjss. Decoct. Cort. Per. ʒvi. Tinct. Cort. Per. simpl. ʒjss. Syr. e Cort. Aur. ʒss. M. f. Mixtura, cujus capiat Coch. iv. horis intermediis.

In the evening his pulse was raised, he was easier, and rested about an hour.

16th. In the morning, after he had rested some hours in the night, he was easier, warmer, and the pulse better.

17th. After a good night he found himself free from complaints, and from this time every circumstance went on favourably; the pocks matured on the 7th day, his legs however were both considerably ulcerated for a fortnight after, but then soon healed.

healed. He remains at present in good health, and feels less uneasiness from his legs than he did before the inoculation.

C A S E XXI.

A middle-aged woman was inoculated, May 15, 1765. She began to complain on the 23d; the fever and other symptoms were very moderate. On the 26th an eruption, distinct in kind, small in number, shewed itself; all the eruptive symptoms ceased, and she seemed perfectly well.

*attended
with
sore throat*

On the 29th she complained that her throat was sore, felt stiff, and swelled, but as this is not unusual, little regard was paid to it.

30th. She rested ill, her throat was worse, and it now gave her great pain to swallow. She had also been taken with a shivering fit, succeeded by a fever. On inspecting the throat I could not perceive one pustule there, but the uvula and tonsils were very much swelled and inflamed. An acidulated gargle was directed, and a lenitive purge, which in the evening had operated thrice; the gargle had been frequently used, but the difficulty of swallowing was greatly increased, insomuch that she could get nothing down; the fever too was rather increased. Further help could not now be expected from internals; for upon making the trial, liquids returned through the nose. I directed a blister to be applied to the throat, and that she should frequently gargle with warm pectoral drink.

31st. She had not slept a minute, being disturbed whenever she attempted it with such sudden startings as made her afraid to sleep. The feverish heat was not very great, the pulse extremely quick, and all the liquids she attempted to swallow still came through the nose. She could not lie down in bed,
and

and therefore sat up in an easy chair the greatest part of the night.

The pustules, which in the face did not exceed twenty, and very few appeared elsewhere, advanced to maturation kindly, without receiving the least check from this adventitious illness. Her speech was so much affected as scarce to be understood. She informed me, however, that she was subject to an illness of this kind; and had once narrowly escaped with her life, but had never been so bad before. I directed twelve ounces of blood to be taken from the arm, and that the sublingual veins should be pricked. But no relief seemed to be derived from any of these measures; and upon inspecting the throat again, the glands, uvula, and fauces were very much inflamed and distended. The tonsils were then lanced pretty deep, and a good deal of blood being discharged, the swelling of the parts subsided, so as to admit her to swallow, though with difficulty, a little pectoral drink, and afterwards a few spoonfuls of milk pottage.

June 1st. She had rested but very little, though exceeding drowsy, and worn out for want of sleep; for the sudden startings, upon closing her eyes, still remained, though not in so great a degree as the preceding night; but she had swallowed some liquids, though with great difficulty. The feverish heat was not very great, the pulse quick and more feeble.

On inspecting the throat towards noon, the swelling, though somewhat abated, was still considerable enough to prevent much being swallowed.

In this dangerous situation the operation that had administered some relief was repeated, and other parts of the tonsils and fauces, which had not been wounded before, were now lanced pretty deep; a large quantity of blood was discharged, the parts collapsed, and in less than an hour she was able to swallow liquids;

liquids; after which she got some refreshing sleep, recovered fast, and is now in good health. The pustules, notwithstanding this illness, advanced very kindly to maturation, and turned on the 7th day from the eruption.

C A S E XXII.

A healthy middle-aged man, rather of a corpulent habit, was inoculated, had a slight cold fit, (on the 5th day inclusive after the operation) which lasted but a very short time, and was not succeeded by either fever or complaint of any kind.

His arms at that time shewed certain signs of the infection having succeeded, which continued advancing to the 9th day, when the inflammations about the incisions appeared considerably spread, and were surrounded with confluent clusters of very small pustules. In other respects he was perfectly well, and felt not the least stiffness or pain in the axilla or elsewhere, insomuch that he began to be uneasy lest he should have no appearance of small-pox.

On the 10th several small pimples were to be seen on the forehead, which I should have thought small-pox, if he had not at this time been quite well, brisk, and hearty, without having felt any previous complaint.

On the 11th in the morning many more were to be seen on the face, limbs, and body, so that he might be said to be very full. I now examined him again very strictly, and could not find that he had been in the least ill; and on inquiring how he had slept, he answered, never better; for he went to bed about ten, and did not wake till near seven in the morning: the eruption, on a close inspection, had such an appearance as would have made me pronounce it the small-pox of an unfavourable kind,

L

if

if it had been preceded, or attended by any feverish or other complaints; but I must confess, that even at this time I supposed it was only an inoffensive rash, as the patient was then, and had been, entirely free from any complaint.

All this day he continued perfectly well, had walked out of his own accord into the fields, and in the evening asserted that he never had been easier or better in all his life; though, as he confessed to me afterwards, he had been in some company, where he smoked his pipe, and drank his share of a quart of ale. Still the pustules remained, and increased in number, though not in size; and nothing but the consideration of his having had none of the complaints which usually precede even the slightest kind of small-pox, kept me in any doubt whether they were the small-pox or not.

The next morning, being the 12th, the attending nurse told me that he had passed a very restless night, with much complaint of pain in his head and back; and I found him very uneasy, with great heat, a quick pulse, and very full of a small sort of small-pox indisputably.

These complaints coming on at this unusual time made me apprehensive of the consequences. I gave directly calom. gr. iij. tart. emet. gr. $\frac{1}{8}$, and advised him to get up and go into the air, but not to fatigue himself too much. I also directed that after two hours he should take a purging draught. [It is to be observed that he had had stools every day regularly; and remaining perfectly well, had taken no medicine for some time.] I called on him again about two, and found him walking about the house, when he said he was better, for that the physick had worked him five times very sufficiently, and each time he had been abroad to the privy, though it rained pretty smartly.

I saw

I saw him again in the evening, and then he made but little complaint of pain in either head or back, but was almost incessantly teized with a short tickling cough, and complained of his throat being sore. He then took another pill of the same kind as that in the morning.

Early the next day, the 13th, the nurse informed me that he had been very restless the whole night, had put on his clothes and came down stairs, but was now gone into bed again, in hopes of getting a little rest. On going into his room I found him almost dressed again, complaining that he had an almost constant irritation in the throat, and finding it impossible to get any sleep, was therefore coming down stairs. I enjoined him, however, to keep within doors.

About one I saw him again; he had had two stools, and was better. His cough remained somewhat troublesome, and his throat grew sore.

In the evening I found him in good spirits, with a regular quiet pulse, and he had one more purging stool. I ordered another pill of the same kind to be taken at going to bed, and a bason of small white wine whey after it, also an oily mixture to be taken occasionally, to relieve his cough and the tickling sensation in the throat.

The 14th in the morning he had some comfortable rest, and felt himself refreshed; his cough had been much better, so that he had taken but once of the oily mixture. This day he had three stools from his pill; and the small-pox had advanced in an unexpectedly kind manner.

From this time nothing material happened; the cough left him, and his throat gave him no trouble.

The pustules filled with good matter in a shorter time than I ever saw such a number of so small a sort, and many were brown on the 17th day, being the 7th from the first appearance.

On the 19th he took a purge, and was perfectly well.

To these cases many others of a similar nature might be added. But by several unforeseen delays, not in my power to prevent, I have been obliged to trespass so much already on the patience of those who wished to see some account of this practice, that I shall only mention a few, which, by a partial or untrue relation, might possibly be construed to the disadvantage of inoculation; though when the particular facts are candidly exhibited, every just occasion of prejudice will undoubtedly be removed.

During the autumn of the last year the chin-cough was epidemick at Hertford; and as the winter approached, the small-pox also broke out in many places; and almost every child, who before had the chin-cough, and was seized with the natural small-pox, died of a confluent kind. This calamity fell severely among the poor of this place, many of whom earnestly intreated me to inoculate their families; but this was scarce possible, without some necessary provision could be obtained for them from the parishes to which they belonged; I therefore acquainted the clergymen of the respective parishes, that if proper care was taken that necessaries were not wanting, I would freely inoculate and attend all such as I thought were proper subjects.

Both the gentlemen approved the design; but after a short consultation with the parishioners, the affair was put off, the parish officers alledging they could not provide proper places.

That such a design had been in agitation soon became known, and a number of poor people were continually soliciting me to inoculate them and their children at all events, promising to provide for themselves to the utmost of their power. Some had the disease already in their families. It was so much in the

the neighbourhood of others, that they were in daily fear of taking the infection, and their distress on this occasion great. Women with children at their breasts, in want of all necessaries, yet solicitous for the safety of their offspring, pressed me to inoculate them and their children with an importunity not to be described. I acquainted them with the danger attending the infant state; but reasons availing nothing, I yielded to inoculate all who had not the chin-cough, or any other dangerous illness, though against my opinion and inclination, almost against my determined resolution. Amongst a very great number of such subjects of all ages and constitutions, and where some might reasonably be presumed to have taken the infection in the natural way, I expected some disagreeable events would happen; but the probability of saving the lives of many preponderated. The following, however, are the only cases that border on the unfortunate; and the reader will, if skilful and candid, easily place them to the right account.

A mother and three children (one of them at the breast) were inoculated. The children had then the chin-cough; but this was carefully concealed from me, as I had refused all under such circumstances. The youngest of above five months old had only five or six pustules in the face, and not more; elsewhere proportionably. She lived past the crisis; but the cough remained violent, and she was much enfeebled, and died as children do who perish by the chin-cough, and without any one circumstance of danger that could be supposed to proceed from inoculation.

Another weakly child, about five months old, I had persuaded the mother to wean, in order that she herself might be inoculated. During the preparation this woman fell ill of a fever, as supposed;
but

but on visiting her, I found the confluent small-pox appearing and that the child had lain with her constantly. I was earnestly solicited to inoculate this infant, in order to give it a better chance, which, with great reluctance, I yielded to; it had a very small number of distinct pustules, and passed through the disease safely; but not being reconciled to any food but the breast, it died soon after, languishing for want of proper sustenance.

Another unfortunate subject was also a child at the breast, one of eight children, who with the father and mother were inoculated together. On the third day from the inoculation this child was seized with a fever, which, from the symptoms, I suspected arose from worms. I gave it a grain of calomel; a large worm was voided the next day, and the child was seemingly better; but the fever returned at night, and continued without remission in such a manner as to be very dangerous in itself, and prevented any distinction of the eruptive symptoms: at length a confluent kind appeared, though the number was not great; the bad symptoms were not alleviated by the eruption, and the child died early in the disease,

All these cases happened since the introduction and first chapter was wrote; and have confirmed my opinion, that it is better, both on account of the subject and the reputation of the practice, to defer inoculating children till they are about two years old.

It seems not improper likewise to mention the following case; which, if the whole truth is not related, may possibly afford matter of cavil against inoculation.

A short, thick-set, middle-aged man was seized with the usual symptoms on the eighth day after inoculation.

inoculation. The eruption was favourable, the crop moderate, the pustules large and distinct, and no peculiar care was either required or observed. The pock matured in seven days; after which he took two purges, and had fixed the day for his return to London.

Two days before his intended journey I found him in the morning sitting by the fire with his hand upon his head; upon inquiring the reason, he answered, my head feels very queer to-day: a person in company added, that he had made too free with mutton the day before; but this he denied. He did not however seem much indisposed; he had taken a purge, and I expected he would be relieved by its operation.

Next morning he told me he had a good night's sleep, and was perfectly well; nevertheless two hours after he fell down suddenly in a fit, and senseless. In this condition I found him about six in the evening, and so he continued till the night of the following day, when he expired, perfectly apoplectic, in spite of every means we could attempt for his relief.

CASES of the natural small-pox, treated in the preceding method.

C A S E XXIII.

ONE morning about ten I was desired to visit a poor man in a fever. Two days before, in the evening, he had been seized with a shivering fit, which was then supposed to be the ague; he soon grew extremely hot, with pain in his head, back, and loins, which continued till I saw him, the 24th October; he had kept his bed, had scarce any

any sleep, his heat great, pulse strong and quick, and the pain in his loins very severe. This man had applied to me to be inoculated a little before he was taken ill, on account of the small-pox being very much in his neighbourhood; but he had not as yet taken any preparatory steps. I made no doubt but he was now attacked with this disease, and from the severity of the symptoms expected it would prove of the confluent kind. As he lived near me, and I could easily attend to every circumstance, I determined to try how far the cooling method might be beneficial in treating the natural pox.

I found it very difficult to persuade him to rise out of bed, as he thought himself utterly unable to support himself, notwithstanding he was, on other occasions, a resolute man. Assuring him however that I would not attend him unless he would comply, he promised to use his utmost endeavours. I left him to put this advice in practice, and ordered him to a carpenter's yard about one hundred yards distance, where I promised to meet him.

In about a quarter of an hour I found he had reached the place of appointment, by the assistance of a neighbour, and was sitting on a bench, complaining of great weakness, and pain in his loins; which he described, by saying he felt as if he was cutting in two; but allowed that his head was easier since he had been in the air. Finding that he had had a stool the preceding day, but none since, I gave him a pill, containing about six grains of calom. and $\frac{1}{8}$ gr. of emet. tartar, immediately; and as he complained of great thirst, I permitted him to drink half a pint of cold water after it. I advised him not to sit, but to endeavour to walk about a little, though ever so slowly; this he attempted, but went almost double. At this time the weather was not very cold, but there was a pretty brisk wind, with small rain.

About

About a quarter of an hour after I saw him again; he had resolutely persisted in following my directions, and said his head was greatly relieved, but the pain in his back and loins was much the same. His pulse was now much altered; instead of being full and strong as before, it was low, but quick, and the heat on the skin greatly abated. As he seemed much fatigued, I did not insist on his keeping abroad longer, but permitted him to go home, desiring him to refresh himself, but not to pull off his clothes, or go into bed.

At two o'clock I saw him again; his pill had then worked twice; he seemed fatigued and faint, but was abroad, for he said the air refreshed him, and his head was easier in the air, than within, so that as soon as he was a little rested he came out by choice. The pain in his loins still remained very grievous, but his head was much easier; and his back and loins became less painful towards evening. I allowed him to go to bed about seven; but being desirous of observing the full effect of this kind of treatment, I ordered no medicine.

25th. Had but little rest, and his complaints nearly the same as when he went to bed. His pulse was now raised, and more full than in the evening, and the degree of heat greater than over night. A few small pustules were now beginning to shew themselves on his face; I directed a purging draught of infusion of senna and manna, quickened with jalap; advised him to get out of bed, and venture again into the air. This he did: by two o'clock the purge had worked thrice, and he was freer from the pain in his back and loins: more pustules now appeared in the face, but scarce any on the limbs. He had hitherto taken nothing since his first seizure, but tea with milk, sage and baum tea, loathing all other nourishment. He persisted in keeping out the greatest part of the after-

M

noon;

noon; and at seven went to bed, when I found the pulse more calm and regular, and as his complaints were less violent, he began to think of nourishment.

26th. I saw him at seven in the morning; he had slept but little, had one purging stool in the night, and felt himself low and languid; his pulse was now even, full, and regular, and his heat moderate. Many more pustules were out in the face, though but few on the limbs, and his complaints of pain in the head and back went off. He took milk pottage with some appetite, and spent the greatest part of the day abroad.

At three in the afternoon I saw him, and was told, that lying down in the bed he had fallen asleep, and waked almost choaked with blood; that he had vomited up a considerable quantity, which doubtless had been swallowed, as he was found bleeding at the nose. From what I could learn, the whole scarcely exceeded six or eight ounces. He complained of faintness, and said his pains were removed. I ordered him to drink the pectoral decoction, acidulated with a mixture of equal quantities of sweet and weak spirit of vitriol. The number of pustules continued increasing slowly on the face and other parts.

Late in the evening I saw him again; two more purging stools had followed; he complained of being very faint and low, and feared he should have no rest.

I now thought it proper to give him an anodyne cordial, and therefore ordered mithrid. 3ss, which he took immediately. By the help of this he passed a very refreshing comfortable night, and thought himself quite well. The eruption was now completed; the small-pox might be properly called distinct: though full in the face, he had only a moderate number of a large sort on all the other parts; and

and he went through the succeeding stages without any difficulty.

C A S E XXIV.

A young woman who was servant in a house where a child had the small-pox in the natural way, determined to stay there and take her chance.

December 25th, 1765, I was desired to see her. She had been taken with a cold fit the preceding afternoon, which was succeeded by a fever, and the usual symptoms attending the eruption, but in a severe manner. I found her in bed, making great complaints of pain in her head, back, and loins; her pulse strong, quick, and full; a flushing red colour in the face, and the fever very high.

With much difficulty I prevailed upon her to get up; ordered her to drink some cold water, and go abroad into the air, though it was a very frosty morning, with sleet. At one o'clock I called again, and found her then below stairs walking about. The heat was much abated, her complexion pale, the pulse small and quick, and all her complaints considerably abated.

The account I received from her, and the persons who attended her, was, that upon first going into the air, she was so feeble, that the nurse, and another to assist, could scarce support her, and it was with much difficulty that she could walk with this assistance; that she drank a glass of cold water from the pump, and before she had been abroad many minutes found herself much easier, and had remained so ever since. It now rained pretty hard, which had obliged her to come in; but she said if her complaints returned, she would certainly go out again, be the weather ever so bad, and in this resolution I encouraged her.

On the 26th, about eleven in the morning, I visited her again, found she had passed a pretty good night, and had felt no remarkable uneasiness; she had been abroad several times the preceding day, to which she imputed the ease she enjoyed. Two pustules of a distinct kind were now out on the face, and she had the disease in a very favourable manner, without the least bad symptom during the progress, or any ill consequence afterwards.

C A S E XXV.

Jan. 3d, 1766.] A healthy young man was inoculated in company with four of his neighbours. On the sixth, presuming that none of them would be ill, I went to London on business. Returning on the 7th in the afternoon, I was met by a servant, who informed me that this man had been taken ill on the 5th in the afternoon, had continued very bad ever since, and now had something broke out, which was suspected to be the small-pox, and that I was desired to visit him immediately: this I complied with, and found him in bed, complaining much of pain in his head, back, and loins, with great heat. Some small pustules were out in his face, which I perceived to be small-pox; this was at five in the evening, and much about forty-eight hours from the first seizure.

The weather was at this time exceeding cold, and it froze very hard. I ordered him out of bed immediately, to drink a glass of cold water, and to get some assistance, and walk abroad in the air. Upon inquiry I found he had passed without a stool the whole day. Five grains of calomel in a pill were ordered to be taken immediately. He rested but little this night, and next morning a great many more pustules were out in the face, sufficient to shew a disposition to flux. As this pill produced

duced no manifest effect, I ordered sal. glaüb. ʒvi. dissolved in water gruel to be taken immediately. The vehemence of the fever and other symptoms were scarce moderated by this eruption.

Notwithstanding the medicine and the severity of the weather, I desired he would get on his clothes, and go into the air as much as he could possibly bear, and in the evening ordered him to be carried in a chaise to the house provided for him in case he had been ill from inoculation. I examined the incisions carefully, but there were not the least signs of the infection having succeeded, either by discolouration, hardness, or any alteration on the skin, nor could he recollect that they had itched or given him the least uneasiness.

In the evening he came to the house as ordered, but was so very feeble and full of complaints, that it was with great difficulty he was got to his room. Upon inquiry I found he had vomited up the salts soon after taking them, and had only one costive stool; he had complied with my orders about getting into the air several times in the day, though with great difficulty. His complaints of thirst, pain in the head and back were at this time very great. I directed him to sit with his feet in warm water for a short time, and, on going into bed, to take a few spoonfuls of a laxative mixture, which was to be repeated till he had stools.

9th. He had been delirious in the night, but rested a little towards morning; the number of pustules was now considerably increased. This day he had three stools from his purging mixture, by which he was relieved, and bore sitting up better.

10th. He passed the night easy, but without sleep. He was very full in the face, but had a smaller number on the body and limbs. No complaint, deserving notice, happened during the progress

gress to maturation. He sat up a part of every day to the eighth from the eruption, when, being blind, and very sore, he kept in bed: they turned on the eleventh, and he recovered perfectly.

It was remarkable in this case, that the inoculated parts never shewed the least signs of infection; nor did a greater number of pustules appear near them than might have been expected if nothing had been done; nor is there to be seen the least mark where the inoculation was performed, though in all other inoculated patients who have had the disease, even in the slightest manner, there constantly remains a scar.

It appeared, on inquiry, that this man had been for a considerable time before in a constant intercourse with families in the small-pox; and there seems not to be the least doubt but his was the natural disease.

C A S E XXVI.

A young woman was seized with a fever, and the usual symptoms. The next day an eruption appeared, which gave some suspicion of the small-pox; on the third day more spots were discovered, but she was not relieved. The disorder was now supposed to be an inflammatory fever, attended with a rash; and as she was extremely delirious, a blister had been applied about two hours before I first saw her. The face was extremely full of very small pustules, which indeed were the small-pox, and there was a considerable number on the neck and limbs; but notwithstanding this eruption, the fever was very high, and the degree of heat so excessive, that I scarce ever felt a person hotter; she was so far sensible as to complain of great pain in her head, stomach, and loins, though very delirious, and extremely restless. She was at an inn much used by carriers,

carriers, and it was highly improper she should remain there. In her present situation I was sensible it might appear very hazardous to move her; but it was evident that the small-pox would be confluent. I judged from the violence of the symptoms the disease would be dangerous, and the event doubtful, and was therefore desirous of trying how far the same method and remedies which were used so successfully in the inoculated small-pox, as well as in some cases of the natural disease, would avail in this. The necessity of removing the patient afforded me a good opportunity, without any imputation of rashness. I therefore proposed her being taken down stairs into a parlour under the room where she then lay, while I was present, and ready to assist if the fatigue should be too much for her; this was consented to; the women assisted in getting her clothes on, which she seemed much pleased with, being then delirious. She was altogether unable to stand, and was therefore brought down by three persons in the same manner as if she had been dead. She was then placed in a chair, but had not even strength to hold herself upright, but was supported in that posture by the women about her.

The fatigue of moving, and change of posture, occasioned a faintness, in which she lost all colour, and the pustules for a time disappeared; upon this, the chair was leaned quite back, the bed was brought down, and laid on the floor, she was placed on it with her clothes on, and eagerly drank a glass of cold water. Her colour soon returned; the pustules appeared as before; but she was considerably cooled, and her pulse, though it retained the quickness, was not near so strong: I staid with her about half an hour, during which time she was more sensible, not so restless, but seemed languid and tired. I ordered the window to be opened,

the

the room to be kept cool, and gave her three grains of calomel, tart. emet. gr. $\frac{1}{3}$, in a pill, and directed a purging draught to be taken as soon as it could be procured, and as there seemed no occasion for the blister, it was taken off.

I saw her next morning at a house to which she had been removed at a small distance, and found her almost free from complaints; she had rested moderately well, was perfectly sensible. Those about her dated her amendment from the time when the purge (which had procured three stools) began to operate,

She was however extremely full all over of a very small confluent kind; yet these inflamed and matured in a very favourable manner. From the minutest observation I could make, it seemed to me that by this management the number in the face was less than when I first saw her, consequently that some pustules were repressed after they had appeared.

C A S E XXVII.

In the beginning of June 1766, a young woman was taken with a shivering fit, succeeded by a fever, and the symptoms that usually precede the small-pox, in a very violent degree; these were attended with such general weakness, that in a few hours after the seizure she was obliged to go to bed, where she soon became delirious, and afterwards insensible, her urine passing involuntarily; in this condition I first saw her about forty hours after she was taken ill. The heat was excessive, her pulse extremely quick, but not strong, and a few small eruptions appeared on the face, sufficient to ascertain the distemper. Upon raising her up she did not make the least effort to support herself, and therefore was permitted to lie down, and as the

the room was small, the window was set open. Five grs. of calomel were with great difficulty got down, and an infusion of senna with manna being prepared, the person attending was desired to give a little and often, till she had a stool.

It was very improper that she should remain in the house where she was, on account of the family; yet there was no possibility of moving her in her present condition. Next morning I was informed she had remained in the same stupid way the whole night, but was now rather better, and had spoke more sensibly, had two stools, and vomited up some bilious matter. The heat was still great, the pulse quick, and many small confluent pustules were out in the face and other parts; this was the third day of her illness. I advised her being got out of bed, and the windows to be kept open; but was in doubt whether she had strength enough to be taken into the open air.

In the evening the eruption was increased considerably in number; and she was so much eased of her complaints, as to bear being removed in a cart to a house in the neighbourhood, where I gave her calomel three grains, emetic tartar one eighth of a grain.

She had some rest this night, but the fever continued; and not having had any more stools, she was ordered to take a laxative potion of inf. of senna and manna. She had three stools before evening, and all her complaints abated. She was very full all over of a very confluent kind.

This young woman sat up the greatest part of several days after she was quite blind, by her own choice; and I do not recollect ever seeing one with so large a crop of pustules who went through the disease so easily; for she made no complaint but of foreness, nor took any medicine but a few drops of the baic tincture at bed-time, towards the crisis.

N

C A S E

C A S E XXVIII.

A poor man about 35 years of age, who had gone through the preparatory course, came to my house in company with several more, in order to be inoculated. As soon as he came into the room, I perceived he was ill; and on enquiring he told me, that about two hours before he had been taken with a fit of the ague, and that his head, back, and loins were in great pain. Feeling his pulse, I found a good deal of fever, his skin was also very hot. I knew the small-pox was in his neighbourhood; and thence concluded he was seized with this distemper. I advised him to keep abroad in the air as much as possible, and directed a pill of the kind already mentioned, at night, and a purging draught the following morning.

These operated four or five times, and he persisted in obeying my orders; the fever and other complaints were not so high as to give any alarm; he had a pretty large number of a distinct pock, and went through the distemper very well.

C A S E XXIX.

About three in the afternoon I visited a middle-aged man, who after two days illness had an eruption, which the neighbours suspected to be the small-pox; I found him in bed, very hot, and in a sweat; his pulse quick, full, and strong; his face pretty full of the small-pox, which had begun to appear in the morning. I received the usual account of the preceding symptoms, which had been pretty severe, and he still made great complaints of pains in his head, back, and loins; I immediately gave him a pill, containing cal. gr. v. tart. emet. gr. $\frac{1}{8}$, which I had taken with

with me upon a presumption that I might want it : I also insisted on his getting up, and going abroad into the air, notwithstanding the sweat he was in, which it was my intention to restrain : I met with the usual difficulty in getting this advice complied with ; however he was assisted, came down stairs, and went abroad, being supported by his wife ; for he seemed very weak, and had not been out of bed for two days before ; as he complained of great thirst, I gave him a glass of cold water, and stayed about half an hour to see the effect of this treatment ; he was at first very faint and sick, and vomited up some bilious matter, but not the pill he had lately taken : after this, while I stayed, he said his head was better, and allowed he was refreshed by the air ; I desired him to continue abroad as much as he could, and when he found himself tired, to go in and lie down a little ; but as soon as he was able, to get out again, and if thirsty to drink as much cold water as he pleased. I then took my leave, ordering a purging draught to be taken as soon as he received it, which I concluded would be at least three or four hours from that time.

Next morning, on visiting him, I was told that the purge had operated four times, that he found himself considerably relieved, both in his head and back, and had rested better than any time since he had been taken ill. The eruption proceeded slowly ; but many more pustules now appeared in his face, and other parts, than before : he kept abroad, and his complaints continued wearing off. Next morning I found him quite easy ; he was pretty full of a distinct pock, and from this time all went on well, without having occasion to take any more medicines.

F I N I S.

C A S E XXVIII.

A poor man about 35 years of age, who had gone through the preparatory course, came to my house in company with several more, in order to be inoculated. As soon as he came into the room, I perceived he was ill; and on enquiring he told me, that about two hours before he had been taken with a fit of the ague, and that his head, back, and loins were in great pain. Feeling his pulse, I found a good deal of fever, his skin was also very hot. I knew the small-pox was in his neighbourhood; and thence concluded he was seized with this distemper. I advised him to keep abroad in the air as much as possible, and directed a pill of the kind already mentioned, at night, and a purging draught the following morning.

These operated four or five times, and he persisted in obeying my orders; the fever and other complaints were not so high as to give any alarm; he had a pretty large number of a distinct pock, and went through the distemper very well.

C A S E XXIX.

About three in the afternoon I visited a middle-aged man, who after two days illness had an eruption, which the neighbours suspected to be the small-pox; I found him in bed, very hot, and in a sweat; his pulse quick, full, and strong; his face pretty full of the small-pox, which had begun to appear in the morning. I received the usual account of the preceding symptoms, which had been pretty severe, and he still made great complaints of pains in his head, back, and loins; I immediately gave him a pill, containing cal. gr. v. tart. emet. gr. $\frac{1}{8}$, which I had taken with

with me upon a presumption that I might want it : I also insisted on his getting up, and going abroad into the air, notwithstanding the sweat he was in, which it was my intention to restrain : I met with the usual difficulty in getting this advice complied with ; however he was assisted, came down stairs, and went abroad, being supported by his wife ; for he seemed very weak, and had not been out of bed for two days before ; as he complained of great thirst, I gave him a glass of cold water, and stayed about half an hour to see the effect of this treatment ; he was at first very faint and sick, and vomited up some bilious matter, but not the pill he had lately taken : after this, while I stayed, he said his head was better, and allowed he was refreshed by the air ; I desired him to continue abroad as much as he could, and when he found himself tired, to go in and lie down a little ; but as soon as he was able, to get out again, and if thirsty to drink as much cold water as he pleased. I then took my leave, ordering a purging draught to be taken as soon as he received it, which I concluded would be at least three or four hours from that time.

Next morning, on visiting him, I was told that the purge had operated four times, that he found himself considerably relieved, both in his head and back, and had rested better than any time since he had been taken ill. The eruption proceeded slowly ; but many more pustules now appeared in his face, and other parts, than before : he kept abroad, and his complaints continued wearing off. Next morning I found him quite easy ; he was pretty full of a distinct pock, and from this time all went on well, without having occasion to take any more medicines.

The first thing I noticed when I stepped
 out of the car was the cold. It was a
 sharp, biting cold that seemed to
 penetrate my coat. I shivered as I
 walked towards the entrance of the
 building. The air was thick with
 the scent of old wood and the
 faint smell of coffee. I had never
 before. It felt like I had entered a
 different world. The walls were made
 of dark, polished wood, and the
 floor was covered in a thick carpet.
 The lighting was warm and inviting,
 and the overall atmosphere was one
 of comfort and relaxation. I had
 heard that this was a great place to
 visit, and now I knew why. It was
 exactly what I needed. I had been
 feeling stressed and overwhelmed, and
 this place was a perfect escape. I
 had found a new place to call home.

A
TREATISE
ON THE
NATURAL SMALL-POX,
AS ALSO
ON THE ARTIFICIAL,
BY
INOCULATION.
WITH THAT
ON THE MEASLES.

By WILLIAM BUCHAN, M. D.

Of the Royal College of Physicians, Edinburgh.

D U B L I N:

Printed by JOHN EXSHAW, in Dame-street.

.....
M.DCC.LXXIV.

THE GREAT

OF THE

NATURAL

ON THE

OF THE

WITH

ON THE

BY WILLIAM

OF THE

THE

THE

OF THE

S M A L L - P O X.

THIS Disease is so general, that very few escape it at one time of life or another. It is the most contagious malady in these parts; and has, for many years, proved the scourge of Europe.

The small-pox generally appear towards the spring. They are very frequent in summer, less so in autumn, and least of all in winter. Children are most liable to this disease; and those whose food is unwholesome, who want proper exercise, and abound with gross humours, run the greatest hazard from it.

The disease is distinguished into the distinct and confluent kind; the latter of which is always attended with danger. There are likewise other distinctions of the small-pox; as the crystalline, the bloody, &c.

CAUSES.—The small-pox are commonly caught by infection. Since the disease was first brought into Europe, the infection has never been wholly extinguished; nor have any proper methods, so far as we know, ever been taken for that purpose; so that now it has become in a manner constitutional. Children who have overheated themselves by running, wrestling, &c. or adults after a debauch, are very apt to be seized with the small-pox.

SYMP.

SYMPTOMS.—This disease is so generally known, that a minute description of it is unnecessary. Children commonly look a little dull, seem listless and drowsy for a few days before the more violent symptoms of the small-pox appear. They are likewise more inclined to drink than usual, have little appetite for solid food, complain of weariness, and, upon taking exercise, are apt to sweat. These are succeeded by slight fits of cold and heat in turns, which, as the time of the eruption approaches, become more violent, and are accompanied with pains of the head and loins, vomiting, &c. The pulse is quick, with a great heat of the skin, and restlessness. When the patient drops asleep, he wakes in a kind of horror, with a sudden start, which is a very common symptom of the approaching eruption; as are also convulsion-fits in very young children.

About the third or fourth day from the time of sickening, the small-pox generally begin to appear; sometimes indeed they appear sooner, but that is no favourable symptom. At first they very nearly resemble flea-bites, and are soonest discovered on the face, arms, and breast.

The most favourable symptoms are a slow eruption, and an abatement of the fever as soon as the pustules appear. In a mild distinct kind of small-pox the pustules seldom appear before the fourth day from the time of sickening, and they generally keep coming out gradually for several days after. Pustules which are distinct, with a florid red basis, and which fill with thick purulent matter, first of a whitish, and afterwards of a yellowish colour, are the best.

A livid brown colour of the pustules is an unfavourable symptom; as also when they are small and flat, with black specks in the middle. Pustules which contain a thin watery ichor are very bad. A great number of pocks on the face is always attended with danger. It is likewise a very bad sign when they are constant, or run into one another.

It is a most unfavourable symptom when petechiæ, or purple, brown, and black spots are interspersed among the pustules. These are signs of a putrid dissolution of the blood, and shew the danger to be very great. Bloody stools or urine, with a swelled belly, are bad symptoms;

as is also a continual strangury. When the urine is very pale, and there is a violent throbbing of the arteries of the neck, it portends a delirium or convulsion fits. When the face does not swell, or falls before the pox come to maturity, it is very unfavourable. If the face begins to fall about the eleventh or twelfth day, and at the same time the hands and feet begin to swell, the patient generally does well; but when these do not succeed each other, there is reason to apprehend danger. When the tongue is covered with a brown crust, it is an unfavourable symptom. Cold shivering fits coming on at the height of the disease are likewise unfavourable. Grinding of the teeth, when it proceeds from an affection of the nervous system, is a bad sign; but sometimes it is occasioned by worms, or a disordered stomach.

REGIMEN.—When the first symptoms of the small-pox appear, people are ready to be alarmed, and often fly to the use of medicine, to the great danger of the patient's life. I have known children, to appease the anxiety of their parents, bled, blistered, and purged, during the fever which preceded the eruption of the small-pox, to such a degree, that nature was not only disturbed in her operation, but rendered unable to support the pustules after they were out; so that the patient, exhausted by mere evacuations, sunk under the disease.

When convulsions appear, they give a dreadful alarm. Immediately some nostrum is applied, as if there were a primary disease; whereas it is only a symptom, and far from being an unfavourable one, of the approaching eruption. As the fits generally go off before the actual appearance of the small-pox, it is attributed to the medicine, which by this means acquire a reputation without any merit.

All that is, generally speaking, necessary during the eruptive fever, is to keep the patient cool and easy, allowing him to drink freely of some weak diluting liquors; as balm-tea, barley-water, clear whey, gruels, &c. He should not be confined to bed; but should sit up as much as he is able, and should have his feet and legs frequently bathed in lukewarm water. His food ought to be very light; and he should be as little disturbed with company as possible.

Much mischief is done at this period by confining the patient too soon to his bed, and plying him with warm cordials or sudorific medicines. Every thing that heats and inflames the blood increases the fever, and pushes out the pustules prematurely. This has numberless ill effects. It not only increases the number of pustules, but likewise tends to make them run into one another; and when they have been pushed out with too great violence, they generally fall in before they come to maturity.

The good women, as soon as they see the small-pox begin to appear, commonly ply their tender charge with cordials, saffron and marigold-teas, wine, punch, and even brandy itself. All these are given with a view, as they term it, to throw out the eruption from the heart. This, like most other popular mistakes, is the abuse of a very just observation, *That when there is a moisture on the skin, the pox rise better, and the patient is easier than when it continues dry and parched.* But that is no reason for forcing the patient into a sweat. Sweating never relieves unless where it comes spontaneously, or is the effect of drinking weak diluting liquors.

Children are often so peevish that they will not lie a-bed without a nurse constantly by them. Indulging them in this, we have reason to believe, has many bad effects both upon the nurse and child. Even the natural heat of the nurse cannot fail to augment the fever of the child; but if she too proves feverish, which is often the case, the danger must be increased*.

Laying several children who have the small-pox in the same bed has many ill consequences. They ought, if possible, never to be in the same chamber, as the perspiration, the heat, the smell, &c. all tend to augment the fever,

* I have known a nurse, who had had the small-pox before, so infected by lying constantly a-bed with a child in a bad kind of small-pox, that she had not only a great number of pustules which broke out all over her body, but afterwards a malignant fever, which terminated in a number of imposthumes or boils, and from which she narrowly escaped with her life. We mention this to put others upon their guard against the danger of this virulent infection.

fever, and to heighten the disease. It is common among the poor to see two or three children lying in the same bed, with such a load of pustules that even their skins stick together. One can hardly view a scene of this kind without being sickened by the sight. But how must the effluvia affect the poor patients, many of whom perish by this usage * ?

A very dirty custom prevails amongst the lower class of people, of allowing children in the small-pox to keep on the same linen during the whole period of that loathsome disease. This is done lest they should catch cold, but it has many ill consequences. The linen becomes hard by the moisture which it absorbs, and frets the tender skin. It likewise occasions a bad smell, which is very pernicious both to the patient and those about him ; besides the filth and sordes which adhere to the linen being resorbed, or taken up again into the body, greatly augment the disease.

A patient should not be suffered to be dirty in an internal disease, far less in the small-pox. Cutaneous disorders are often occasioned by nastiness alone, and are always increased by it. Were the patient's linen to be changed every day, it would greatly refresh him. Care indeed is to be taken that the linen be thoroughly dry. It ought likewise to be warmed, and put on when the patient is most cool.

So strong is the vulgar prejudice in this country, notwithstanding all that has been said against the hot regimen in the small-pox, that numbers still fall a sacrifice

O 2

to

* This observation is likewise applicable to hospitals, work-houses, &c. where numbers of children happen to have the small-pox at the same time. I have seen above forty children cooped up in one apartment all the while they had this disease, without any of them being admitted to breathe the fresh air. No one can be at a loss to see the impropriety of such conduct. It ought to be a rule, not only in hospitals for the small-pox, but likewise for other diseases, that no patient should be within sight or hearing of another. This is a matter to which too little regard is paid. In most hospitals and infirmaries, the sick, the dying, and the dead, are often to be seen in the same apartment.

to that error. I have seen poor women travelling in the depth of winter, and carrying their children along with them in the small-pox; and have frequently observed others begging by the way-side, with infants in their arms covered with the pustules; yet I could never learn that one of these children died by this sort of treatment. We would not however propose this as an example worthy of imitation; we only mention it to shew, that the danger of exposing children to the open air in this disease is not so great as people are apt to imagine.

Strong prejudices however, when got over, often produce the opposite extremes. We would therefore advise people, when they avoid one error, not to run into another. Some celebrated inoculators order their patients to walk about all the time they are under the disease, as if they ailed nothing. We should think it adviseable to keep them within doors, at least during the eruption, as very cold air is apt to check the perspiration, and to prevent the pox from rising, or filling with matter. I do not remember ever to have seen large well filled pustules where the patient was too much exposed to the external air. In winter the air of this country is abundantly cool within doors, and in summer a patient may be kept more uniformly cool in the house than he can be out of it. For these and other reasons, we should think it right to confine the patient to the house while the eruption is out, but never to allow the heat of his chamber to be so great as to increase the fever, or occasion a difficulty of breathing, &c. *

The food in this disease ought to be very light, and of a cooling nature, as panado, or bread boiled with equal quantities of milk and water, good apples roasted or
boiled

* It is now very common in the environs of great towns to meet people on the public walks with the small-pox upon them. However well this may suit the purposes of boasting inoculators, we cannot help thinking that all the ends of fresh air might be answered to the patients, without exposing them in public, to the great terror and danger of their fellow-citizens, who have not had the disease. Surely humanity and good policy should forbid this practice.

boiled with milk, and sweetened with a little sugar, or such like.

The drink may be equal parts of milk and water, clear sweet whey, barley-water, or thin-gruel, &c. After the pox are full, butter-milk, being of an opening and cleansing nature, is a very proper drink.

MEDICINE.—This disease is generally divided into four different periods, *viz.* the fever which precedes the eruption, the eruption itself, the suppuration, or maturation of the pustules, and the secondary fever.

It has already been observed, that little more is necessary during the primary fever than to keep the patient cool and quiet, allowing him to drink diluting liquors, and bathing his feet frequently in warm water. Though this be generally the safest course that can be taken with infants, yet adults of a strong constitution and plethoric habit sometimes require bleeding. When a full pulse, a dry skin, and other symptoms of inflammation, render this operation necessary, it ought to be performed; but, unless these symptoms are urgent, it is safer to let it alone; if the belly be bound, emollient clysters may be thrown in.

If there be a great nausea or inclination to vomit, weak camomile-tea or lukewarm water may be drank, in order to clean the stomach. At the beginning of a fever, nature generally attempts a discharge, either upwards or downwards, which, if promoted by gentle means, would tend greatly to abate the violence of the disease.

Though every method is to be taken during the primary fever, by a cool regimen, &c. to prevent too great an eruption; yet, after the pustules have made their appearance, our business is to promote the suppuration, by diluting drink, light food, and, if nature seems to flag, by generous cordials. When a low creeping pulse, faintness, and great loss of strength, render cordials necessary, we would recommend good wine, which may be made into negas, with an equal quantity of water, and sharpened with the juice of orange, the jelly of currants, or the like. Wine-whey sharpened as above, is likewise a proper drink in this case; great care however must be taken not to overheat the patient by any of these things. This, instead of promoting, would retard the eruption.

Some-

Sometimes the rising of the small-pox is prevented by the violence of the fever; in this case the cool regimen is strictly to be observed. The patient's chamber must not only be kept cool, but he ought likewise frequently to be taken out of bed, and to be lightly covered with clothes while in it.

Excessive restlessness often prevents the rising and filling of the small-pox. When that happens, gentle opiates are necessary. These however ought always to be administered with a sparing hand. To an infant, a tea-spoonful of the syrup of poppies may be given every five or six hours, till it has the desired effect. An adult will require a table-spoonful in order to answer the same purpose.

If the patient be troubled with a strangury, or suppression of urine, which often happens in the small-pox, he should be frequently taken out of bed, and, if he be able, should walk across the room with his feet bare. When he cannot do this, he may be frequently set on his knees in bed, and should endeavour to pass his urine as often as he can. When these do not succeed, a tea-spoonful of the sweet spirits of nitre may be occasionally mixed with his drink. Nothing more certainly relieves the patient, or is more beneficial in the small-pox, than a plentiful discharge of urine.

If the mouth be foul, and the tongue dry and chapped, it ought to be frequently washed, and the throat gargled with water and honey, sharpened with a little vinegar or currant jelly.

During the rising of the small-pox, it frequently happens that the patient is eight or ten days without a stool. This not only tends to heat and inflame the blood, but the feces, by lodging so long in the body, become acrid and even putrid; from whence bad consequences must ensue. It will therefore be proper, when the belly is bound, to throw in an emollient clyster every second or third day, through the whole course of the disease. This will greatly cool and relieve the patient.

When petechiæ, or purple, black, or livid spots appear among the small-pox, the Peruvian bark must immediately be administered in as large doses as the patient's stomach can bear. For a child, two drams of the bark in powder may be mixed in three ounces of common water,

water, one ounce of simple cinnamon-water, and two ounces of the syrup of orange or lemon. This may be sharpened with the spirits of vitriol, and a table spoonful of it given every hour. If it be given to an adult in the same form, he may take at least three or four spoonfuls every hour. This medicine ought not to be trifled with, but must be administered as frequently as the stomach can bear it; in which case it will often produce very happy effects. I have frequently seen the petechiæ disappear, and small-pox, which had a very threatening aspect, rise and fill with laudable matter, by the use of the bark and acids.

The patient's drink ought likewise in this case to be generous, as wine or strong negas acidulated with spirits of vitriol, vinegar, the juice of lemon, jelly of currants, or such like. His food must consist of apples roasted or boiled, preserved cherries, plumbs, and other fruits of an acid nature.

The bark and acids are not only necessary when the petechiæ or putrid symptoms appear, but likewise in the lymphatic or crystalline small-pox, where the matter is thin, and not duly prepared. The Peruvian bark seems to possess a singular power of assisting nature in preparing laudable pus, or what is called good matter; consequently it must be beneficial, both in this and other diseases, where the crisis depends on a suppuration. I have often observed where the small-pox was flat, and the matter contained in them quite clear and transparent, and where at first they had the appearance of running into one another, that the use of a few drams of the Peruvian bark, acidulated as above, changed the colour and consistence of the matter, and produced the most happy effects.

When the eruption subsides suddenly, or, as the good women term it, when the small-pox *strike in*, before they have arrived at maturity, the danger is very great. This is often the effect of a hot regimen, or medicines which, at the beginning, push out the matter before it has been properly prepared. When this happens, blistering plasters must be immediately applied to the wrists and ancles, and the patient's spirits supported with cordials.

Sometimes bleeding has a surprising effect in raising the pustules after they have subsided; but it requires skill
to

to know when this is proper, or to what length the patient can bear it. Sharp cataplasms however may be applied to the feet and hands, as they tend to promote the swelling of these parts, and by that means to draw the humours towards the extremities.

The most dangerous period of this disease is what we call the secondary fever. This generally comes on when the small-pox begin to blacken, or turn on the face, and most of those who die of the small-pox are carried off by this fever.

Nature generally attempts, at the turn of the small-pox, to relieve the patient by loose stools. Her endeavours this way are by no means to be counteracted, but promoted, and the patient at the same time supported by food and drink of a nourishing and cordial nature.

If at the approach of the secondary fever the pulse be very quick, hard, and strong, the heat intense, and the breathing laborious, with other symptoms of an inflammation of the breast, the patient must immediately be bled, otherwise a fatal peripneumony will ensue. The quantity of blood to be let must be regulated by the patient's strength, age, and the urgency of the symptoms.

But, in the secondary fever, if the patient be faintish, the pustules become suddenly pale, and if there be great coldness of the extremities, blistering plasters must be applied, and the patient must be supported with generous cordials. Wine and even spirits have sometimes been given in such cases with amazing success.

As the secondary fever is in great measure, if not wholly, owing to the absorption of the matter, it would seem highly consonant to reason, that the pustules, as soon as they come to maturity, should be opened. This is every day practised in other phlegmons which tend to suppuration; and there seems to be no reason why it should be less proper here. On the contrary, we have reason to believe, that by this means the secondary fever might always be lessened, and often wholly prevented.

The pustules should be opened when they begin to turn of a yellow colour. Very little art is necessary for this operation. They may either be opened with a pair of scissars or a needle, and the matter absorbed by a little dry lint. As the pustules are generally first ripe on the

the face, it will be proper to begin with opening these, and the others in course as they become ripe. The pustules generally fill again, a second or even a third time; for which cause the operation must be repeated, or rather continued so long as there is any considerable appearance of matter in the pustules.

We have reason to believe, that this operation, rational as it is, has been neglected from a piece of mistaken tenderness in parents. They believe, that it must give great pain to the poor child; and therefore would rather see it die than have it thus tortured. This notion however is entirely without foundation. I have frequently opened the pustules when the patient did not see me, without his being in the least sensible of it; but suppose it were attended with a little pain, that is nothing in comparison to the advantages which arise from it.

Opening the pustules not only prevents the resorption of the matter into the blood, but likewise takes off the tension of the skin, and by that means greatly relieves the patient. It likewise tends to prevent the pitting, which is a matter of no small importance. Acrid matter, by lodging long in the pustules, cannot fail to corrode the tender skin; by which many a handsome face becomes so deformed as hardly to bear a resemblance to the human figure*.

It is generally necessary, after the small-pox are gone off, to purge the patient. If however the belly has been open through the whole course of the disease, or if butter-milk and other things of an opening nature have been drank freely after the height of the small-pox, purging becomes less necessary; but it ought never wholly to be neglected.

For very young children, an infusion of senna and prunes, with a little rhubarb, may be sweetened with coarse sugar, and given in small quantities till it operates.

P

Those

* Though this operation can never do harm, yet it is only necessary when the patient has a great load of small-pox, or when the matter which they contain is of so thin and acrid a nature, that there is reason to apprehend bad consequences from its being too quickly resorbed, or taken up again into the mass of circulating humours.

Those who are farther advanced must take medicines of a sharper nature. For example, a child of five or six years of age may take eight or ten grains of fine rhubarb in powder over night, and the same quantity of jalap in powder next morning. This may be wrought off with fresh broth or water-gruel, and may be repeated three or four times, five or six days intervening betwixt each dose. For children further advanced, and adults, the dose must be increased in proportion to the age and constitution.

When imposthumes happen after the small-pox, which is not seldom the case, they must be brought to suppuration as soon as possible, by means of ripening poultices; and, when they have been opened, or break of their own accord, the patient must be purged. The Peruvian bark and a milk diet will likewise be useful in this case.

When a cough, a difficulty of breathing, or other symptoms of a consumption, succeed to the small-pox, the patient must be sent to a place where the air is good, and put upon a course of asses milk, with such exercise as he can bear.

OF INOCULATION.

Though no disease, after it is formed, baffles the powers of medicine more than the small-pox, yet more may be done before-hand to render this disease favourable than any one we know, as almost all the danger from it may be prevented by inoculation. This salutary invention has been known in Europe above half a century, but, like most other useful discoveries, it has, till of late, made but slow progress. It must however be acknowledged, to the honour of this country, that inoculation has met with a more favourable reception here than among any of our neighbours. It is still however far from being general, which we have reason to fear will ever be the case, so long as the practice continues in the hands of the Faculty.

No discovery can ever be of general utility while the practice of it is kept in the hands of a few. Had the inoculation of the small-pox been introduced as a fashion,
and

and not as a medical discovery, or had it been practised by the same kind of operators here as it is in those countries from whence we had it, it had long ago been universal. The fears, the jealousies, the prejudices, and the opposite interests of the faculty, are, and ever will be, the most effectual obstacles to the progress of any salutary discovery. Hence it is that the practice of inoculation never became, in any measure, general, even in England, till taken up by men not bred to physic. These have not only rendered the practice more extensive, but likewise more safe, and, by acting under less restraint than the regular practitioners, have taught them that the patients greatest danger arose, not from the want of care, but from the excess of it.

They know very little of the matter, who impute the success of modern inoculators to any superior skill, either in preparing the patient or communicating the disease. Some of them indeed from a sordid desire of ingrossing the whole practice to themselves, pretend to have extraordinary secrets or nostrums for preparing persons for inoculation, which never fail of success. But this is only a pretence calculated to blind the ignorant and inattentive. Common sense and prudence alone are sufficient both in the choice of the subject and management of the operation. Whoever is possessed of these may perform this office for his children whenever he finds it convenient, provided they be in a good state of health.

This sentiment is not the result of theory, but of observation. Though few physicians have had more opportunities of trying inoculation in all its different forms, so little appears to me to depend on these, generally reckoned important circumstances, of preparing the body, communicating the infection by this or the other method, &c. that for several years past I have caused the parents or nurses to perform the whole themselves, and have found that method followed with equal success, while it is free from many inconveniencies that attend the other.

A critical situation, too often to be met with, first put me upon trying this method. A gentleman who had lost all his children except one son by the natural small-pox, was determined to have him inoculated. He told me his intention, and desired I would persuade the mother and

grandmother, &c. of its propriety. But that was impossible. They were not to be persuaded, and either could not get the better of their fears, or were determined against conviction. It was always a point with me, not to perform the operation without the consent of parties concerned. I therefore advised the father, after giving his son a dose or two of rhubarb, to go to a patient who had the small-pox of a good kind, to open two or three of the pustules, taking up the matter with a little cotton, and as soon as he came home to take his son apart, and give his arm a slight scratch with a pin, afterwards to rub the place well with the cotton, and take no further notice of it. All this he punctually performed; and at the usual period the small-pox made their appearance, which were of an exceeding good kind, and so mild as not to confine the boy an hour to his bed. None of the other relations knew but the disease had come in the natural way till the patient was well.

We do not propose this as the only method in which the small-pox can be communicated. Experience teaches us that it may be done various ways with equal success. In Turkey, from whence we learned the practice, the women communicate the disease to children, by opening a bit of the skin with a needle, and putting into the wound a little matter taken from a ripe pustule. On the coast of Barbary they pass a thread wet with the matter through the skin, between the thumb and fore-finger; and in Europe inoculation is generally performed by making a small incision through the cuticle of the arm or leg with a lancet, and laying a bit of thread wet with the matter upon the wound, which is covered with a piece of sticking plaster, and kept on for two or three days.

Some of the people in England who make a trade of inoculation, only open one of the ripe pustules with a lancet, and while it is wet with the matter make a slight incision in the arm of the person to whom they want to communicate the disease; afterwards they close up the wound, and leave it without any other dressing. It is likewise done with a lancet covered with the dry matter, but this is less certain. It frequently fails, and ought never to be depended upon unless where fresh matter cannot be had.

Indeed,

Indeed, if fresh matter be applied long enough to the skin, there is no occasion for any wound at all. Let a bit of thread, about half an inch long, wet with the matter, be immediately applied to the arm, midway between the shoulder and elbow, and covered with a piece of the common sticking plaster, and kept on for eight or ten days. This will seldom fail to communicate the disease. We mention this method because many people are afraid of a wound; and doubtless the more easily the operation can be performed, it has the greater chance to become general. Some people imagine, that the discharge from a wound lessens the eruption; but there is no great stress to be laid upon this notion: Besides, deep wounds often ulcerate, and become troublesome.

We do not find that inoculation is at all considered as a medical operation in those countries from whence we learned it. In Turkey it is performed by the women, and in the East Indies by the Brachmins or Priests. In this country the custom is still in its infancy; we make no doubt however but it will soon become so familiar, that parents will think no more of inoculating their children, than at present they do of giving them a dose of physic.

No set of men have it so much in their power to render the practice of inoculation general as the clergy, the greatest opposition to it still arising from some scruples of conscience, which they alone can remove. We would recommend it to them not only to endeavour to remove the religious objections which weak minds may have to this salutary practice, but to enjoin it as a duty, and to point out the danger of neglecting to make use of a means which Providence has put in our power for saving the lives of our offspring. Surely such parents as wilfully neglect the means of saving their children's lives, are as guilty as those who put them to death. We wish this matter were duly weighed. No one is more ready to make allowance for human weakness and religious prejudices, yet I cannot help recommending it, in the warmest manner, to parents to consider how great an injury they do their children, by neglecting to give them this disease in the early period of life.

The numerous advantages arising from the inoculation of the small-pox, have been pretty fully pointed out by
the

the learned Dr. M^cKenzie in his History of Health *. To these we shall only add, that such as have not had the small-

* “ Many and great, says this humane author, are the dangers attending the natural infection, from all which the inoculation is quite secure. The natural infection may invade weak or distempered bodies, by no means disposed for its kindly reception. It may attack them at a season of the year either violently hot or intensely cold. It may be communicated from a sort of small-pox impregnated with the utmost virulence. It may lay hold upon people unexpectedly, when a dangerous sort is imprudently imported into a maritime place. It may surprize us soon after excesses committed in luxury, intemperance or lewdness. It may likewise seize on the innocent after indispensable watchings, hard labour, or necessary journies. And is it a trivial advantage, that all these unhappy circumstances can be prevented by inoculation? By inoculation numbers are saved from deformity as well as from death. In the natural small-pox, how often are the finest features, and the most beautiful complexions miserably disfigured? Whereas inoculation rarely leaves any ugly marks or scars, even where the number of pustules on the face have been very considerable, and the symptoms by no means favourable. And many other grievous complaints, that are frequently subsequent to the natural sort, seldom follow the artificial. Does not inoculation also prevent those inexpressible terrors that perpetually harass persons who never had this disease, inso-much that when the small-pox is epidemical, intire villages are depopulated, markets ruined, and the face of distress spread over the whole country? From this terror it arises, that justice is frequently postponed, or discouraged at sessions or assizes where the small-pox rages. Witnesses and juries dare not appear; and, by reason of the necessary absence of some gentlemen, our honourable and useful judges are not attended with that reverence and splendor due to their office and merit. Does not inoculation in like manner prevent our brave sailors from being seized with this distemper on shipboard, where they must quickly spread the infection among such of the crew who never had it before, and where they have scarce
any

small-pox in the early period of life are not only rendered unhappy, but likewise, in a great measure, unfit for sustaining many of the most useful and important offices. Few people would chuse even to hire a servant who had not had the small-pox, far less to purchase a slave who had the chance of dying of this disease. How could a physician or a surgeon, who had never had the small-pox himself, attend others under that malady? How deplorable is the situation of females, who arrive at mature age without having had the small-pox! A woman with child seldom survives this disease: And if an infant happens to be seized with the small-pox upon the mother's breast who has not had the disease herself, the scene must be distressing! If she continues to suckle the child, it is at the peril of her own life; and if she weans it, in all probability it will perish. How often is the affectionate mother forced to leave her house, and abandon her children, at the very time when her care is most necessary? Yet should parental affection get the better of her fears, the consequences would often prove fatal. I have known the affectionate mother and her sucking infant laid in the same grave, both untimely victims to this dreadful malady. But these are scenes too shocking even to mention. Let parents who run away with their children to avoid the small-pox, or who refuse to inoculate them in infancy, consider to what deplorable situations they may be reduced by this mistaken tenderness.

As the small-pox has now become a constitutional disease in most parts of the known world, no other choice remains but to render the malady as mild as possible; this is the only manner of extirpation now left in our power; and, though it may seem paradoxical, the artificial method of communicating the disease, could it be rendered universal, would amount to nearly the same thing as rooting it out. It is a matter of small consequence,

any chance to escape, being half-stifled with the closeness of their cabins, and but very indifferently nursed? Lastly, with regard to the soldiery, the miseries attending these poor creatures, when attacked by the small-pox on a march, is inconceivable, without attendance, without lodgings, without any accommodation; so that one of three commonly perishes."

quence, whether a disease be entirely extirpated, or rendered so mild as neither to destroy life nor hurt the constitution; but that this may be done by inoculation, does not now admit of a doubt. The numbers who die under inoculation hardly deserve to be named. In the natural way, one in four or five generally dies; but by inoculation not one of a thousand. Nay, some can boast of having inoculated ten thousand without the loss of a single patient.

I have often wished to see some plan established for rendering this salutary practice universal; but am afraid I shall never be so happy. The difficulties indeed are many; yet the thing is by no means impracticable. The aim is great; no less than saving the lives of one-fourth part of mankind. What ought not to be attempted, in order to accomplish so desirable an end?

The first step towards rendering the practice universal, must be to remove the religious prejudices against it. This, as already observed, can only be done by the clergy. They must not only recommend it as a duty to others, but likewise practice it on their own children. Example will ever have more influence than precept.

The next thing requisite is to put it in the power of all. For this purpose we would recommend it to the Faculty to inoculate the children of the poor *gratis*. It is hard that so useful a part of mankind should, by their poverty, be excluded from such a benefit.

Should this fail, it is surely in the power of any State to render the practice general, at least as far as their dominion extends. We do not mean, that it ought to be enforced by a law. The best way to promote it would be to employ a sufficient number of operators at the public expence to inoculate the children of the poor. This would only be necessary till the practice became general; afterwards custom, the strongest of all laws, would oblige every individual to inoculate his children to prevent reflections.

It may be objected to this scheme, that the poor would refuse to employ the inoculators: This difficulty is easily removed. A small premium to enable mothers to attend their children while under the disease, would be a sufficient inducement; besides, the success attending the operation would soon banish all objections to it. Even
considerations

considerations of profit would induce the poor to embrace this plan. They often bring up their children to the age of ten or twelve, and when they come to be useful, they are snatched away by this malady, to the great loss of their parents, and detriment of the public.

The British legislature has, of late years, shewn great attention to the preservation of infant lives, by supporting the foundling-hospital, &c. But we will venture to say, if one tenth part of the sums laid out in supporting that institution, had been bestowed towards promoting the practice of inoculation of the small-pox among the poor, that not only more useful lives had been saved, but the practice ere now rendered quite universal in this island. It is not to be imagined what effect example and a little money will have upon the poor; yet, if left to themselves, they would go on for ever in the old way, without thinking of any improvement. We only mean this as a hint to the humane and public-spirited. Should such a scheme be approved, a proper plan might easily be laid down for the execution of it.

But as public plans are very difficult to bring about, and often, by the selfish views or misconduct of those intrusted with the execution of them, fail of answering the noble purposes for which they were designed; we shall therefore point out some other methods by which the benefits of inoculation may be extended to the poor.

There is no doubt but inoculators will daily become more numerous. We would therefore have every parish in Britain to allow one of them a small annual salary for inoculating all the children of the parish at a proper age. This might be done at a very trifling expence, and it would put it in the power of all to enjoy the benefit of this salutary invention.

Two things chiefly operate to prevent the progress of inoculation. The one is a wish to put the evil day as far off as possible. This is a principle in our nature; and as inoculation seems rather to be anticipating a future evil, it is no wonder mankind are so averse to it. But this objection is sufficiently answered by the success. Who in his senses would not prefer a lesser evil to-day to a greater to-morrow, provided they were equally certain?

Q

The

The other obstacle is the fear of reflections. This has very great weight with the bulk of mankind. Should the child die, they think the world would blame them. This they cannot bear. Here lies the difficulty which pinches, and till that be removed, inoculation will make but small progress. Nothing however can remove it but custom. Make the practice fashionable, and all objections will soon vanish. It is fashion alone that has led the multitude since the beginning of the world, and will lead them to the end. We must therefore call upon the more enlightened part of mankind to set a pattern to the rest. Their example, though it may for some time meet with opposition, will at length prevail.

I am aware of an objection to this practice from the expence with which it may be attended; this is easily obviated. We do not mean that every parish ought to employ a Sutton or a Dimsdale as inoculators. These have, by their success, already recommended themselves to crowned heads, and are beyond the vulgar reach; but have not others an equal chance to succeed? They certainly have. Let them make the same trial, and the difficulties will soon vanish. There is not a parish, and hardly a village in Britain, destitute of some person who can bleed. But this is a far more difficult operation, and requires both more skill and dexterity than inoculation.

The persons to whom we would chiefly recommend the performance of this operation are the clergy. Most of them know something of medicine. Almost all of them bleed, and can order a purge, which are all the qualifications necessary for the practice of inoculation. The Priests among the less enlightened Indians perform this office, and why should a Christian teacher think himself above it? Surely the bodies of men, as well as their souls, merit a part of the pastor's care; at least the greatest teacher who ever appeared among men seems to have thought so.

Should all other methods fail, we would recommend it to parents to perform the operation themselves. Let them take any method of communicating the disease they please, provided the subject be healthy, and of a proper age, they will seldom fail to succeed to their wish. I have known many instances of parents performing the operation,

tion, and never so much as heard of one bad consequence. A planter in one of the West India islands, is said to have inoculated, with his own hand, in one year, three hundred of his slaves, who, notwithstanding the warmth of the climate, and other unfavourable circumstances, all did well. Common mechanics, have often, to my knowledge, performed the operation with as good success as physicians. We do not, however, mean to discourage those who have it in their power from employing people of skill to inoculate their children, and attend them while under the disease, but only to shew, that where such cannot be had, the operation ought not upon that account to be neglected.

Instead of multiplying arguments to recommend this practice, I shall just beg leave to mention the method which I took with my own son, then an only child. After giving him two gentle purges, I ordered the nurse to take a bit of thread which had been previously wet with fresh matter from a pock, and to lay it upon his arm, covering it with a piece of sticking plaster. This staid on six or seven days, till it was rubbed off by accident. At the usual time the small-pox made their appearance, and were exceedingly favourable. Sure this, which is all that is generally necessary, may be done without any skill in medicine.

The spring and autumn have been usually reckoned the most proper seasons for inoculation, on account of the weather being then most temperate; but it ought to be considered that these are generally the most unhealthy seasons of the whole year. Undoubtedly the best preparation for the disease is a previous good state of health. I have always observed that children in particular are more sickly towards the end of spring and beginning of summer, that at any other time of the year. On this account, I would propose the beginning of winter as the most proper season for inoculation; though, on every other consideration, the spring or autumn would seem to be preferable.

The most proper age for inoculation is betwixt three and five. Many disagreeable circumstances attend inoculating children sooner, which we have not time to enumerate. Neither should the operation be too long delayed. When the fibres begin to grow rigid, and chil-

dren make use of grosser food, the small-pox become more dangerous.

Children who have constitutional diseases, must nevertheless be inoculated. It will often mend the habit of body; but ought to be performed at a time when they are most healthy. Accidental diseases should always be removed before inoculation.

It is generally thought necessary to regulate the diet for some time before the disease be communicated. In children, however, great alteration in diet is seldom necessary, their food being commonly of the most simple and wholesome kind; as milk, water-pap, weak broths, bread, light pudding, mild roots, and white meats.

But children who have been accustomed to a hotter diet, who are of a gross habit, or abound with bad humours, ought to be put upon a spare diet before they be inoculated. Their food should be of a light cooling nature; and their drink whey, butter-milk, and such like.

We would recommend no other medicinal preparation but two or three mild purges, which ought to be suited to the age and strength of the patient. It is no doubt possible by purgative and mercurial medicines, and a very cool regimen, to lessen the eruption; but it seldom happens, that the eruption by inoculation proves too great; and we have always observed, that those children who had a pretty free eruption, and where the pox filled well, enjoyed the best health afterwards.

The regimen during the disease must be the same as under the natural small-pox. The patient must be kept cool, his diet must be light, and his drink weak and diluting, &c. Should any bad symptoms appear, which is seldom the case, they must be treated in the same way as directed in the natural small-pox. Purging is not less necessary after the small-pox by inoculation, than in the natural way, and ought by no means to be neglected*.

* It has been a question among physicians, whether any danger would attend inoculation, supposing the patient to have had the disease before. This question has generally been answered in the negative; but, from several facts which have occurred in my practice, I am inclined to think it merits further consideration. April 1764,

1764, in order to satisfy her relations, I inoculated a girl about six years of age, who, there was some reason to believe, had had the small-pox before. She had no eruption, except a very few small hard pustules resembling warts, which never suppurated, nor seemed to contain any matter. They disappeared, and a putrid fever ensued, which ended in an almost universal mortification of the whole body, of which she died.

A gentleman of my acquaintance, who practised inoculation very extensively, had taken as much matter from a patient in the small-pox as was sufficient to inoculate 40 or 50 others. For this he had been obliged to open a good many pustules, and, while his hands were daubed with the matter, happening to cut one of his fingers, he immediately put his thumb upon it, to keep in the blood, and held it there for some time, till a rag was got with which he bound up the wound, and took no further notice of it. About eight days after he began to feel an unusual weariness upon the least motion, and complained of a dull pain of his head and loins, with a listlessness and want of appetite. On the ninth or tenth in the evening he complained of sickness, and was actually seized with a syncope or fainting fit. Next morning an eruption appeared, which was pretty universal, but thickest upon the limbs. This had indeed more the appearance of a rash than of small-pox; but as it appeared about the same time after receiving the wound that the small-pox generally do after inoculation, as the symptoms previous to the eruption were the same with those which usually precede the eruption of the small-pox, as the eruption continued upon the skin about the same number of days that the small-pox generally do, &c. there seemed to be a good deal of reason to conclude that the disease had proceeded from a quantity of the variolous matter which had been introduced into the blood by the wound. This patient indeed recovered by the help of medicine and a good constitution; but had the latter been wanting, which was the case with the first-mentioned patient, he might have shared the same fate.—N. B. This gentleman had had both the small-pox and measles in the natural way many years before.

Several

Several other cases have occurred to me where the constitution seemed to suffer by the variolous matter having been introduced into the blood without producing what could properly be called the small-pox. This ought, at least, to make practitioners careful not to communicate the poison unless where there is a prospect of exciting the disease. Neither ought they to be too solicitous in suppressing the eruption, as that seems to be the only safe way in which the *virus* can be discharged after it has got into the blood,

OF THE
M E A S L E S.

THE measles appeared in Europe about the same time with the small-pox, and have a great affinity to that disease. They both came from the East, are both infectious, and seldom attack people more than once. The measles are most common in the spring season, and generally disappear in summer. The disease itself, when properly managed, seldom proves fatal; but its consequences are often very troublesome.

CAUSE.—This disease, like the small-pox, proceeds from infection, and is more or less dangerous according to the constitution of the patient, the season of the year, the climate, &c.

SYMPTOMS.—The measles, like other fevers, are preceded by alternate fits of heat and cold, with sickness, and loss of appetite. The tongue is white, but generally moist. There is a short cough, a heaviness of the head and eyes, drowsiness, and a running at the nose. Sometimes indeed the cough does not come before the eruption has appeared. The eye-lids frequently swell so as to occasion blindness. The patient generally complains of his throat; and a vomiting or looseness often precedes the eruption. The stools in children are commonly greenish; they complain of an itching of the skin, and are remarkably peevish. Bleeding at the nose is common, both before and in the progress of the disease.

About

About the fourth day, small spots, resembling flea-bites, appear, first upon the face, then upon the breast; and afterwards on the extremities: These may be distinguished from the small-pox by their scarcely rising above the skin. The fever, cough, and difficulty of breathing, instead of being removed by the eruption, as in the small-pox, are rather increased; but the vomiting generally ceases.

About the sixth or seventh day from the time of sickening, the measles begin to turn pale on the face, and afterwards upon the body; so that by the ninth day they entirely disappear. The fever however, and difficulty of breathing, often continue, especially if the patient has been kept upon too hot a regimen. Petechiæ, or purple spots, may likewise be occasioned by this error.

A violent looseness sometimes succeeds the measles; in which case the patient's life is in imminent danger.

Such as die of the measles generally expire about the ninth day from the invasion, and are commonly carried off by a peripneumony, or inflammation of the lungs.

The most favourable symptoms are a moderate looseness, a moist skin, and a plentiful discharge of urine.

When the eruption suddenly falls in, and the patient is seized with a delirium, he is in the greatest danger. If the measles turn too soon of a pale colour, it is an unfavourable symptom, as are also great weakness, vomiting, restlessness, and difficulty of swallowing. Purple or black spots appearing among the measles, are very unfavourable. When a continual cough, with hoarseness, succeeds the disease, there is reason to suspect an approaching consumption of the lungs.

Our business in this disease is to assist Nature by proper cordials, in throwing out the morbid matter, if her efforts be too languid; but when they are too violent, they must be restrained by evacuations, and cool diluting liquors, &c. We ought likewise to endeavour to appease the most urgent symptoms, as the cough, restlessness, and difficulty of breathing.

REGIMEN.—The cool regimen is necessary here as well as in the small-pox. The food too must be light and the drink diluting. Acids however do not answer so well here as in the small-pox, as they tend to exasperate the cough. Small beer likewise, though a good drink

drink in the small-pox, is here improper. The most suitable liquors are decoctions of liquorice with marsh mallow roots and sarsaparilla, infusions of linseed, or of the flowers of elder, balm tea, clarified whey, barley-water, and such like. These, if the belly be bound, may be sweetened with honey; or, if that should disagree with the stomach, a little manna may occasionally be added to them.

MEDICINE.—The measles being an inflammatory disease, without any critical discharge of matter, as in the small-pox, bleeding is commonly necessary, especially when the fever runs high, with difficulty of breathing, and great oppression of the breast. But if the disease be of a mild kind, bleeding may be omitted.

Bathing the feet and legs frequently in lukewarm water both tends to abate the violence of the fever, and to promote the eruption.

The patient is often greatly relieved by vomiting. When there is a tendency this way, it ought not to be stopped, but encouraged by drinking lukewarm water, or weak camomile tea.

When the cough is very troublesome, with dryness of the throat, and difficulty of breathing, the patient may hold his head over the steam of warm water, and draw the steam into his lungs.

He may likewise lick a little sperma ceti and sugar-candy pounded together; or take now and then a spoonful of the oil of sweet almonds, with sugar-candy dissolved in it. These will soften the throat, and relieve the tickling cough.

In case the measles should suddenly disappear, it will be necessary to pursue the same method which we have recommended when the small-pox recede. The patient must be supported with wine and cordials. Blistering plasters must be applied to the legs and arms, and the body rubbed all over with warm flannels. Warm poultices may likewise be applied to the feet and palms of the hands.

When purple or black spots appear, the patient's drink should be sharpened with spirits of vitriol; and if the putrid symptoms increase, the Peruvian bark must be administered in the same manner as directed in the small-pox.

R

Opiates

Opiates are sometimes necessary, but should never be given except in cases of extreme restlessness, a violent looseness, or when the cough is very troublesome. For children, the syrup of poppies is sufficient. A tea-spoonful or two may be occasionally given, according to the patient's age, or the violence of the symptoms.

After the measles are gone off, it is generally proper to give the patient a dose or two of physic. This may be conducted in the same manner as directed in the small-pox.

If a violent looseness succeeds the measles, it may be checked by taking for some days a gentle dose of rhubarb in the morning, and an opiate over night; but if these do not remove it, bleeding will seldom fail to have that effect.

Patients recovering after the measles, should be very careful what they eat or drink. Their food, for some time, ought to be light, and in small quantities, and their drink diluting, and rather of an opening nature; as butter-milk, whey, and such like. They ought also to beware of exposing themselves too soon to the cold air, lest a suffocating catarrh, an asthma, or a consumption of the lungs should ensue.

Should a cough, with difficulty of breathing, and other symptoms of a consumption, remain after the measles, small quantities of blood may be frequently let at proper intervals, as the patient's strength and constitution will permit. He ought likewise to drink asses milk, to remove to a free air, if in a large town, and to ride daily on horseback. He must keep close to a diet consisting of milk and vegetables; and lastly, if these do not succeed, let him remove to a warmer climate*.

* Attempts have been made to communicate the measles, as well as the small-pox, by inoculation, and we make no doubt but in time the practice will succeed very well. Dr. Home of Edinburgh says, he communicated the disease by the blood. Others have tried this method, and have not found it succeed. Some think the disease would be more certainly communicated by rubbing the skin of a patient who has the measles with cotton, and afterwards applying the cotton to a wound, as
in

in the small-pox; while others recommend a bit of flannel which had been applied to the patient's skin all the time of the disease, to be afterwards laid upon the arm or leg of the person to whom the infection is to be communicated. There is no doubt but this disease, as well as the small-pox, may be communicated various ways; the most probable however is either from cotton rubbed upon the skin as mentioned above, or by introducing a little of the sharp humour which distills from the nose or eyes of the patient into the blood. It is agreed on all hands that such patients as have been inoculated had the disease very mildly, we therefore wish the practice were more general, as the measles have of late become very fatal.

F I N I S.

R 2

AN

The first of these is the fact that the
 second of these is the fact that the
 third of these is the fact that the
 fourth of these is the fact that the
 fifth of these is the fact that the
 sixth of these is the fact that the
 seventh of these is the fact that the
 eighth of these is the fact that the
 ninth of these is the fact that the
 tenth of these is the fact that the

AN
ACCOUNT
OF SOME
EXPERIMENTS,

Made by Order of the
EMPERESS of GERMANY;
By PHYSICIANS appointed,

For the PURPOSE of discovering, whether a previous
PREPARATION is necessary for INOCULATION, and
a particular REGIMEN to be followed, during the
COURSE of the DISORDER.

By Baron VAN SWEITEN, of VIENNA, M. D.
PHYSICIAN to their IMPERIAL MAJESTIES.

D U B L I N:
Printed by JOHN EXSHAW, in Dame-street.

M.DCC.LXXIV.

Г. И. У. О. В. А.

EXPERIMENT

RECEIVED

June 19 1941

1. The first part of the document is a list of names and titles, including "The Hon. Mr. Justice" and "The Hon. Mr. Justice".

A N

A C C O U N T, &c.

JUST as I had finished the History of the Natural Small-pox, for the use of the Imperial Family, I received some information of communicating that disorder by inoculation, that is, by introducing a small quantity of the pus between the scarf and the real skin, by the assistance of a lancet, and the necessity of a preparatory course with the use of purgative medicines, a strict abstinence from many sorts of food, while other things were warmly recommended, *viz.* plain water, emulsions, drinks mixed with the juice of *lemons* and *oranges*, now and then using a purgative medicine, and when costive, clysters; but what appeared the most remarkable was, that the patients were to be exposed to the open air, and that too, almost every day, while others were aired in their carriages, or on foot, and in their usual clothing.

So-far the general practice, while some had powders given them by practitioners, compounded of antimony, and others with mercurial preparations, which they most industriously concealed, while they contributed the greatest efficacy to them in that disorder.

This most favourable account of inoculation, lead me to attend many persons during the course of the disease, in order to be perfectly informed of every thing respecting it; in this attention I plainly discovered, that, the preparative course might be omitted without danger,
and

and that the attention chiefly necessary was, to choose such subjects only as are in health. Some of our physicians inoculated infants within the sixth day after their birth, when no preparation could take place, nor was I singular in my opinion respecting a previous preparation, as some of the most eminent physicians who paid the same attention united in it with me.

The next thing that fell under consideration was, the injunction of abstinence from flesh soups, and all animal food, during the continuance of the disorder.—In the orphan hospital, which is situated in the suburbs of *Vienna*, not any change was made in their manner of living after inoculation, but care was taken they should enjoy the greatest freedom of air during the whole day, and sleep in rooms that were large, lofty, and a free circulation of air. The same gentlemen afterwards attended different experiments, to satisfy themselves of the necessity of medicines, after inoculation had been performed, as these administered by Mr. *Sutton*, were so industriously concealed, that not any conclusive opinions could be formed from them.

During the course of our experiments (which were not a few) we could not discover the least necessity of the use of medicine, as the patients most successfully passed through the operation without taking any. The food given them, was, broth made of the flesh of young animals, the tenderest sorts of herbs, and such fruits as were in season, and perfectly ripe, bread and pastry, nor were eggs excluded from their food. The patients had for their reception a summer palace, sufficiently spacious, and her most august highness the Empress, was careful every necessary respecting both their bed and board should be attended to, and gave each a gratuity on their departure. Every patient spent many hours every day in the gardens, particularly before noon, after they had dined, and again after supper; one of the Imperial physicians had assigned him the care of the whole process, and as my situation was very favourable, I attended the course of the operation, from the time of inoculation to effecting the cure, carefully noting every thing worthy of observation, of which the public may expect a further account.

The

The small-pox communicated by inoculation, being equally infectious with that from nature, many in the village were seized with it; they were also taken into the Royal Castle, and treated in every particular, as were the inoculated patients, and with equal success. From these experiments we were lead to be of an opinion, that, was the natural small-pox treated in the same manner, the subjects suffered to enjoy the freedom of air, without medicines, and a less strictness in regimen, that they would be in as little danger as those who had the disorder by inoculation. One of our subjects in particular, a female, laboured under a confluent kind, (in the natural way) and of no small malignity, she inhabited the same apartments with the inoculated patients, was taken with them every day to the gardens, and happily recovered. Ever since I have pursued the same practice, and in a variety of cases, with great success, and the pustules in many of my patients, though they were very numerous, yet kept very distinct, and went off very favourably.

The faculty, with others who attended these experiments, were not a little surprized, that so malignant, and often so dangerous a disorder, should yield to such a simple method of cure.

Simplex veri Sigillum.

F I N I S.